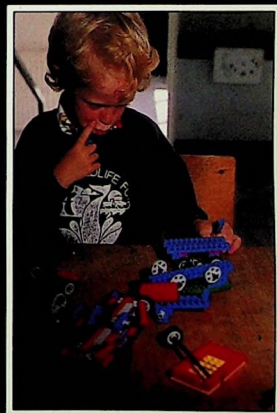
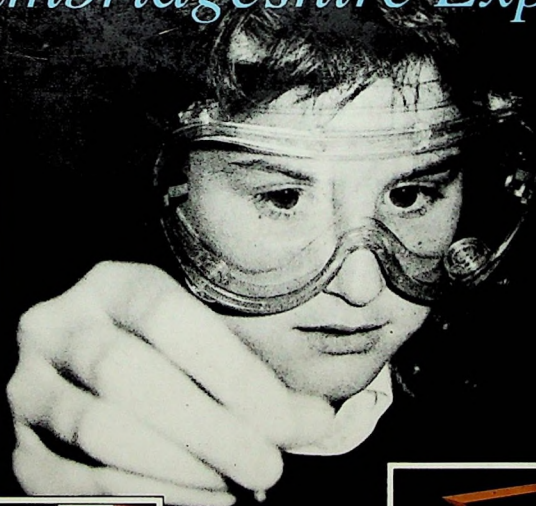
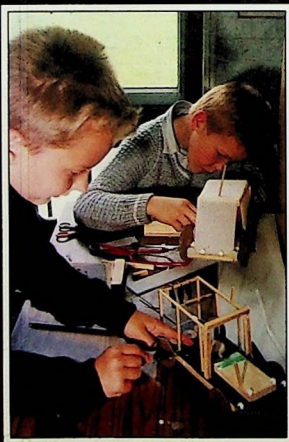


LEARNING NOW

The Cambridgeshire Experience



The model plane that I made in the CDT room

Mr Brown set us an incredible task to make a model plane that cost 40p or under, by ourselves, for a competition.

I set about it almost straight away with great enthusiasm and vigour. I had the idea set in my mind - it was a small plane with balsa wood wings.

I started it at home with the help of my very enthusiastic brother. He cut out both sets of wings and I sand papered them down and in no time at all I had completed my plane. I tested it it was good but not good enough! So, I took it to school to modify it. I worked on it for absolutely ages, but still I was not impressed.

I decided out of my sheer anger to go back to the drawing board. But keep the wings as they cost money. I got a cardboard box and made it (I don't know how) into the body. I chopped the front wings in half and glued them on again. pointing up slightly. I glued the wings back on normally. I tested it and finally I was satisfied. I knew it wouldn't be a winner but it did fly seven and a half metres and that's all I care.

But now I have my doubts about it flying at all. I crashed it into the sea at Hunstanton and got the cardboard wet. So now its all broken up.

Irena, aged 9

As typed and printed on a BBC Master at her Cambridgeshire primary school

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TABLE OF CONTENTS

INTRODUCTION

The Chief Education Officer, Mr Geoffrey Morris	3
Learning Now - The Cambridgeshire Experience	5

PART ONE

New Girl	9
Baking Bread	10
Balloons	11
What we saw at Stibbington	12
Snowman	14
Questions for Teachers on pupils' use of Language	15
John's Dilemma	16
Voyage on a Yacht	17
Enlargers	18
Fit for Life	20
Outer Space	21
Avez-vous une table de libre?	22
Streamlined	23
Macbeth	24
Café Continental	25

PART TWO

Curriculum Policy - How we make it work	27
The seven aspects of development	27
Skills, ideas and attitudes	27
How this book came to be written	30

THE CREATIVE AND AESTHETIC

ART

Learning to look	32
Joining in	33
Working together	34

HOME ECONOMICS

Fabric, textures, shapes and colours	35
--------------------------------------	----

MUSIC

Music in the whole curriculum - The dragon dances to the sound of the gongs!	36
Linking school and the community	37
Children as composers	38

DRAMA

Rôle play to develop ideas	39
Rôle play to solve problems	40

THE LINGUISTIC

ENGLISH

Poetry with older juniors	42
Working with Shakespeare in the Primary School	43
Listening to stories tells quite a tale!	44
Creative writing in GCSE	46

MODERN LANGUAGES

Let's Talk	47
A day in the life of.....	48

THE MATHEMATICAL

Maths for real lives!	49
Spatial activities- learning to solve problems	51
Using number in the primary school	52
What can calculators do?	53

HUMAN, SOCIAL & POLITICAL

Background	54
A Caribbean Influence	55
Duncan	56
Children tackle an age-old problem - growing old	57
A Victorian experience	58
Young planners search for a new town site	59
Feeling for others	60

SPIRITUAL, ETHICAL & MORAL

Background	61
Jane is coming	62
New Life	63
What do we expect?	64
The Indian Dancer	65

THE PHYSICAL

Background	66
Who cares if its work?	67
Variety is the spice for a fitter life	68
Some things you remember forever	69

THE SCIENTIFIC & TECHNOLOGICAL

Background	71
TECHNOLOGY	
"A" Level Technology - Industry benefits from a student's work!	72
Calculator styling	74

HOME ECONOMICS

More than Victoria sponges.....	75
---------------------------------	----

PRIMARY SCIENCE & TECHNOLOGY

Trains and boats and planes.....	76
A real Launchpad!	77

SECONDARY SCIENCE

Rained off!	78
-------------	----

INFORMATION TECHNOLOGY

I T - Learning by pretending....	79
Big Trak shows the way!	80
The world of hi-tec comes into secondary schools	81
Extra, extra, read all about it!	82

PREPARATION FOR ADULT LIFE AND WORK

Background	83
The birthday party	84
Business information studies for 14-16 year olds	85
Careers, work experience and industrial liaison 13-16	86
The Technical and Vocational Education Initiative - TVEI	87
Young Enterprise - College style!	89

THE NATIONAL CURRICULUM

ACKNOWLEDGEMENTS



Cambridgeshire

After the 1986 and 1988 Education Acts, the education service we provide in Cambridgeshire for our children and young people is changing and developing. It is right therefore, that at such a time of change, we highlight both our confidence in the quality of the service and its readiness to scrutinise what it does and how it is done.

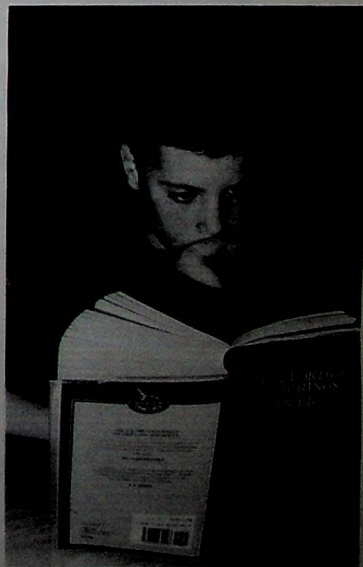
At the heart of that scrutiny is the curriculum, which, is of course about the way our young people spend their time in formal education. It is about what they learn and the attitudes they carry forward into adult life.

So this book aims to describe the very best of practice in the County and to put it in the context of the National Curriculum debate. We see the publication of "Learning Now" as a milestone - it both points the way forward and signals the values which I believe have long been shared in Cambridgeshire.

Our thanks are due to the very many headteachers, teachers and school governors who told us about the exciting things going on in their schools. Only a small proportion of the total can be included in a book of this size. There is much more which will be included in the guidelines to follow this publication, which will confirm us on the road to fulfilling our obligations under the National Curriculum.

The word 'partnership' has perhaps fallen out of favour in recent years, but the active, vibrant partnership between teachers and parents, between Governors and the Local Education Authority and its elected Councillors, to which this book bears witness, is the sure and certain foundation on which the quality of our service rests. Long may it continue to promote the interests of Cambridgeshire's children and young people.

G.H. Morris
Chief Education Officer



WHAT EACH PAGE WILL SHOW IN PART 1

Each page offers a "snapshot" of a moment of teaching/learning in a Cambridgeshire school or college. The **TITLE BAR** tells you the main subject of this "snapshot" and also the important **KEYWORDS** about **POLICY** and **VALUES** that it illustrates. (See Introduction Page 6).

This part is the **SNAPSHOT** - a brief glimpse as an observer of a moment in a school or college. These descriptions emphasise what children are doing with teachers and other adults - the activities which are the "building blocks" of their experience and learning.

BALLOONS

WORK, GROWTH, CONTINUITY

This part offers a **COMMENTARY** on the description of the activity. It suggests important features which we as adults involved with children's learning should observe and consider.

This part contains other questions or links with the National Curriculum, which you as a parent or, perhaps, a school governor, might like to know or ask yourself in thinking about the activity described on this page.

LEARNING NOW - The Cambridgeshire Experience

Education is at the forefront of political debate at the moment as we all seek to improve our schools and ask fundamental questions about them. The questions we hear from parents are often like these.

*How do children spend their day in a primary school?
Have standards in reading and writing fallen or risen?
How do I help my children do their topic work?
Can I be of use in the school?
What is technology about?
Does my child have special needs?
How do I judge my child's school?
What is the GCSE?
What are F.E Colleges like?
What is the National Curriculum?*

Parents, governors, heads, teachers, County Councillors - we look back on our own school days for points of comparison, remembering the different schools and colleges we attended. We all have vivid memories of the classrooms we inhabited for so many years of our lives and, for good and bad, many of the attitudes we carry through to our adult lives were formed there.

People need to learn, need to carry on learning all their lives. They need to acquire knowledge and skills and express feelings about a changing world in which they participate actively - especially in terms of the increasing demands on us all to cope with social, technological and economic changes.

Since 1870, as business and industry have advanced, society's needs have been met by the introduction of a formal, compulsory system of schools and colleges. Within the last 30 years, educational developments have had to keep pace with an acceleration of scientific, technical and social change. As a result, it is right that the education

service re-examines its purpose and direction.

What is happening today? What changes are necessary to meet today's and tomorrow's needs?

The 1988 Education Act

The 1988 Education Act sets out to develop and change the curriculum, school government, finance and the assessment of children's progress in the years ahead. As we review together our aspirations for our children and young people, developing our notions of what and how they learn, we should grasp this timely and maybe unique opportunity to build on best practice and establish it in all our schools and colleges. The National Curriculum - part of the 1988 Act - is therefore the framework for the descriptions, commentary and questions which follow. A summary of the recommendations of the Act for the curriculum concludes this preliminary stage in setting the scene for Cambridgeshire's children.

Responsibility

Learning Now will also help parents and school Governors deal with their responsibilities under the 1988 Education Act. 'Responsibility' is one of its key words. Parents and Governors will have responsibilities alongside the Head and teachers for important aspects of the running of 'their' schools. Teachers will be responsible for making the new National Curriculum a success, for assessing children's progress and sharing this information with parents.

The Local Education Authority's Role

The Local Education Authority - Members of the County Council, Officers and Inspectors - need to be clear about what makes a successful school or college in order to build on strengths and overcome deficiencies. We hope that these snapshots of school life prompt you to ask questions from your standpoint as a parent about what the school aims to do for your child, and as a teacher about how you help children to learn.

Education will in the future be more open to public scrutiny than ever before. A statement of agreed values and current best practice will help us to judge what we see and join more fully in planning a better service for the future of children growing up in Cambridgeshire.

The Cambridgeshire Experience

This document, Learning Now - The Cambridgeshire Experience, highlights some of the best in teaching and learning and shows what we expect to be happening in all of our schools and colleges.

Part 1 of this book shows how children and young people learn and develop through a series of episodes which chart their progress from the age of 3 to 19. An accompanying commentary shows factors which contribute to high quality learning.

These examples have been selected from material collected between January and June 1988 when Inspectors, Officers and Teachers looked at good practice in Cambridgeshire's schools, to identify key features. Further selections and an account of their context form the second part of this book.

We cannot, of course, hope in a publication of this size to include everything a school or college does, but to provide a representative sample. Over the next year, much fuller details of what we expect from education in Cambridgeshire will be made available in a series of booklets of guidance.

Cambridgeshire is also a community education authority. It is the pioneer among a large and growing band of local education authorities who are committed to an education service which strives to meet the needs of the whole community, throughout life, and to enable people to be involved in the planning and provision for their educational needs and in seeking their contribution to the enhancement of the society in which they live.

That broader vision colours all its schools and colleges, for it is there that the foundations are laid and attitudes shaped for the future.

This book focuses on the education of children and young people and that is one part of the picture. The roots run deep into Cambridgeshire society and will all form part of its response to change in education in the interests of its children and young people.

POLICY AND VALUES

The values upon which Cambridgeshire County Council has built its education service, and upon which it will plan for the 1990's and beyond are set out below. They must all be seen in the context of the National Curriculum, which defines the Core and Foundation studies which must be available to all children from 5-16;

WORTH

All students are of equal value regardless of their sex, race, ability or background.

OPPORTUNITY

All pupils should have equal access to the resources and opportunities available in their schools and colleges.

ENTITLEMENT

Children are entitled to high quality, well planned and well organised teaching throughout their education.

GROWTH

What children and young people learn at school should contribute to their emotional, physical, intellectual, social and spiritual growth, enabling them to develop and test their own personal values and attitudes.

PROGRESS

Teachers should select topics and assignments which ensure pupils' knowledge and skills progress at the right pace.

CONTINUITY

Learning at school should be part of a continuous chain for each individual, so when pupils change schools or teachers, details of their previous work and development should help decide their future programme.

PARTICIPATION

Children should participate actively in their own learning, solving problems by trial and error and exploring a variety of ways of expressing themselves.

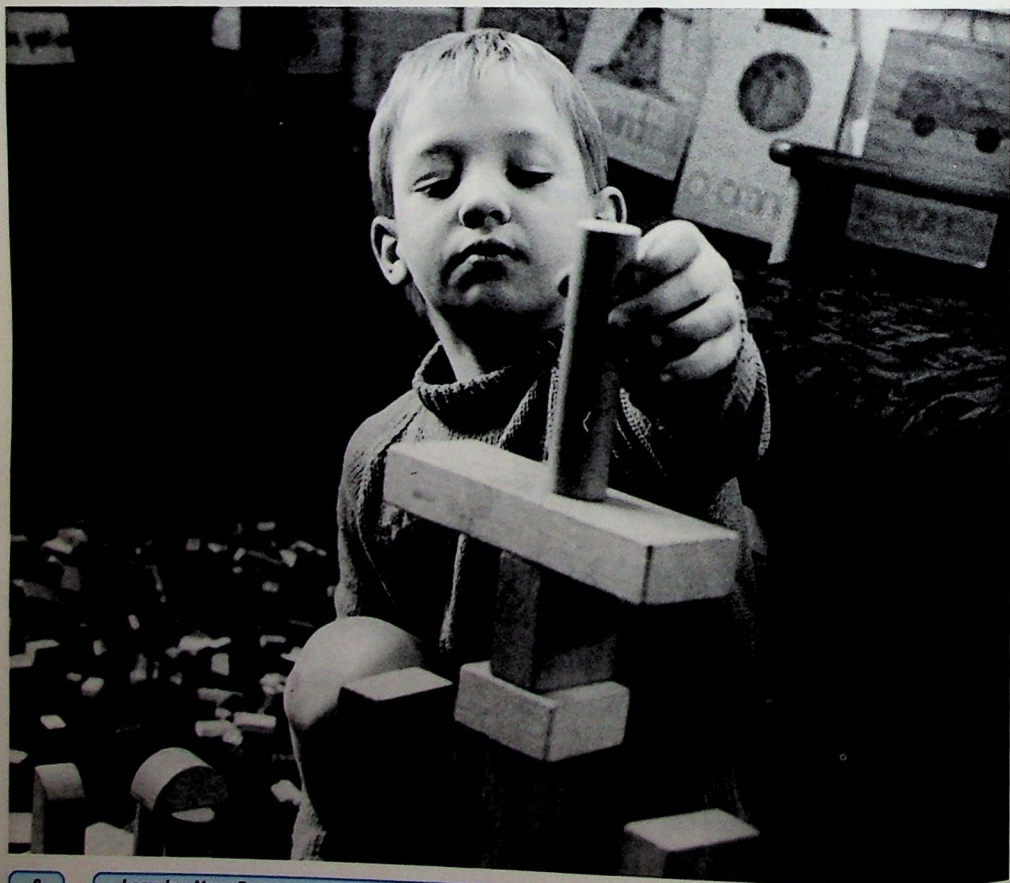
EVALUATION

Schools and colleges need to be in a position to judge how successful they are in realising the values for their students.

COMMUNITY

All schools and colleges should identify and foster supportive relationships with the various communities

PART 1



A three year old girl is visiting the nursery attached to the County Primary School in the village for the first time. Holding her mother's hand she passes through a large door to a carpeted area. An enormous red and gold papier mâché monster, breathing tissue-paper smoke and flame, guards the door beyond. She approaches the creature hesitantly, a hand extended.

Is it real?

Does it bite?

Who made it?

The Headteacher greets the visitors quietly.

"Have you met our dragon?"

The girl is led to the nursery classroom by one of the parents who helps on Tuesdays. Her mother goes with the Head to discuss whether her daughter is ready to start school for the whole day.

"Would you like to see the playhouse?"

Some larger, noisy children run around the ply-board house with its bright green walls and open windows. Boys and girls in PVC aprons paint with powder colours in a corner with a huge white sink. An assistant helps the new girl put on an old shirt and gives her a brush. Soon she is absorbed, painting a dark night sky on sugar paper, with a dragon underneath, a splodge in gold. Her mother comes to collect her.

"The Head says you can start next week."

COMMENTARY

*The head encourages a team approach. Teachers plan activities and displays month by month.

*A wide range of materials, including easily obtained items like newspaper and yoghurt pots, is collected and used in displays, art and craft etc.

*Children have every opportunity to explore natural and man made objects and to express their responses.

*The school has an 'open door' policy; there are coffee mornings after Friday assembly and weekly surgeries for parents to talk with teachers.

*Parents join in activities, including swimming, and help with reading.

Questions parents ask:

Will I be involved in deciding when my child is ready to start school?

How does the teacher meet the different needs of four and five year olds in the same class? How different are they?

Should I teach my child the alphabet?

Can I come into school to see what is going on with early years education?

Has the County Council a Policy about under-fives which I could read?

A shop counter and display has been set up in the carpeted area. Crusty loaves, rolls and scones are placed by an old-fashioned cash register, filling the classroom with the smell of warm, fresh bread.

"I'd like three scones, please."

Children plan their shopping, counting their money. Others are weighing flour and butter on the scales, helped by the general assistant who is there to assist the teacher because the class includes Matthew, a physically disabled boy. Another group is at the oven, where a helper slides a tray of rolls into place. The teacher is showing a boy how to cut out some card in the shape of a cottage loaf. The lad smears some white glue over the cut-out and sprinkles ears of corn over the sticky surface. There is a wall chart showing how yeast works and how different types of bread are made.

COMMENTARY

- *The class is organised in groups of five or six; children learn to work together and the numbers for each activity are reduced.
- *Tasks are practical so that pupils can understand what they have to do in context.
- *Skills required can be practised at home.
- *Pupils learn control by using malleable materials like clay, flour, papier mâché and plasticine.
- *Activities are planned to provide a common experience through which children can develop their own diverse responses.
- *Pupils' ideas are respected; all are important.
- *Children with special needs are taught in the same way and in the same classrooms as able-bodied children.

Questions parents ask:

- Why do you encourage them to talk as they work?
- Does it matter that they don't all work as one big group?
- How important is it for me to use the same reading materials as the teacher?
- Why do you emphasise learning by doing?
- Is this 'play' or learning?

The top infants are changed, warmed up in the small hall, a carpeted area with loudspeakers, brightly coloured drapes and simple gymnastic equipment. The girls wear pink, blue and black leotards; the boys, tee-shirts and shorts; their feet are bare.

The teacher explains how the dance will follow their topic theme of flight. She switches on a hair-dryer to make a breeze. A soft, bouncing tape is played, and the children work on ideas - growing, jumping, floating, spinning, collapsing. One small boy blows out his cheeks and sinks slowly to the floor; two girls play with an imaginary balloon.

As ideas develop, the teacher stops the action and asks each child to show their movements. They follow the rhythm of their hands, arms and voices. Finally, the children dance as a group, forming a circle and miming the story of a large balloon popped by a pin. The lesson ends with the teacher saying:

"I enjoyed that myself."



COMMENTARY

*The teacher has been on several courses organised by the local dance animateur and meets regularly with staff from other schools.

*She takes demonstration lessons so ideas are shared with colleagues. When they experiment with their own classes advice and support is offered.

*There is close cooperation between infant and junior teachers to devise Physical Education guidelines.

*The activity is part of a continuous and integrated pattern of learning, involving concentration, perseverance, cooperation and communication.

*Children are encouraged to watch and learn from each other; the choice of theme ensures continuity and progression from one lesson to the next.

*The teacher is aware of children who need help and moves quietly to each, offering advice or encouragement.

Questions parents ask:

Is dance for boys as well as girls?

What does the Physical Education programme contain?

Is Physical Education linked with a Health Education programme?

Does it matter if my child isn't very good at sport?

A water-coloured, thin-nosed, sharp eared fox catches the eye in a display of accurate sketches of animals and plants. There is a coloured cross-section of a frog, showing how it leaps; tiny drawings of invertebrates (snail, harvest man, lace-wing, ladybird, aphid); a pond-dipper's guide to water boatmen, whirligig beetles and damsel-fly nymphs. Children's pencil sketches and observations cover the next panel:

*"When mammal trapping
We filled the trap with straw and
camouflaged it with grass then we
went in. In the morning we picked
it up. The door was shut I was excited
Steve got the straw out and we had.....
caught one! It was a field vole. After
we had looked at it, we let it go"*

There is a report on a wall survey, recording the numbers of snails, woodlice, spiders and the variety of plants - dandelions, moss, lichen, variegated ivy, nettle grass.

The children sit on the carpet in a semi-circle, remembering what they saw during the weekend at St-ibbington, the first night away from home for most of them.

COMMENTARY

*A residential experience and visits to observe nature in a neighbouring wood and stream are included in the curriculum for everyone. Residential centres and camps offer many children the chance of learning to live and work together, to be tolerant of each other and understand each others' needs, and to become increasingly conscious of conservation issues.

*Teachers liaise with staff at the residential centre to make arrangements and plan activities.

*Children make sketches of plants, animals and objects; progressing from observation to understanding.

*Pupils record numbers and types observed, learning to spot patterns and ask questions.

* Handwriting and presentation are stressed.

The National Curriculum

*Close observation of nature is one of the early skills needed for scientific study.

(The National Curriculum Working Group on Science recommended that scientific study should be subdivided into:-

Living things and their interaction with the environment;

Materials and their characteristics;

Forces and their effects;

The earth, atmosphere and space [under review].)

*Systematic recording techniques are required for scientific study.

*Delight in and the desire to investigate and find out how life forms function is the basis for much future scientific study



After break, everyone gathers on the carpet. Outside it is still snowing and icy cold,

*"To
boggan
or not
to boggan?
That is the question."*

The teacher reads aloud from Roger McGough's "Sky in the Pie".

*"The street
outside
quiet
as a
long
white
bandage."*

The children are excited by the falling flakes of snow but grow quiet as they listen

*"I heard a tap at the window
Saw a snowman standing there....
So I put the kettle on
and invited him inside."*

There are beaming faces as they hear the end ("by the way, the kitten's made a puddle on the floor") and decide whether their own 'snow writing' should be a poem, story or drama. Parents sit at the tables, ready to join in the writing.

COMMENTARY

*The school's language policy is based on Jerome Bruner's idea: "Language is for using, and the uses of language are so varied.... that it is to study the world and, indeed, all possible worlds."

*Pupils experience a variety of stimuli and have extensive opportunities to practice language skills in pairs and groups.

*They experiment with different roles, talking and writing for a variety of audiences.

The National Curriculum

*Core studies must include English.

*Children's desire to read for themselves is stimulated by exciting, vivid, regular early exposure to a range of language and materials which excite their curiosity and desire to talk.

*Developing language is critical: the Committee of Inquiry into the teaching of English Language records,

"In language lies the most important difference between mankind and the rest of the animal kingdom. Language expresses identity; enables cooperation, and confers freedom. In language we create a symbolic model of the world in which past and present are carried forward to the future."

QUESTIONS FOR TEACHERS ON PUPILS' LANGUAGE DEVELOPMENT

* Story-telling

How involved is s/he when listening to stories?

How easy is it for him/her to tell a story arising from a play?

Can s/he re-tell a story in a sensible sequence?

Can she write his/her own stories and tell them to others?

* Conversation

How much does s/he understand?

Does s/he talk but not listen?

Is s/he at ease when talking with children/adults?

Does s/he listen but not talk?

* Description and recall

Can s/he deliver messages accurately?

Can s/he describe objects and events?

* Drama

Is s/he confident when performing in a role for others?

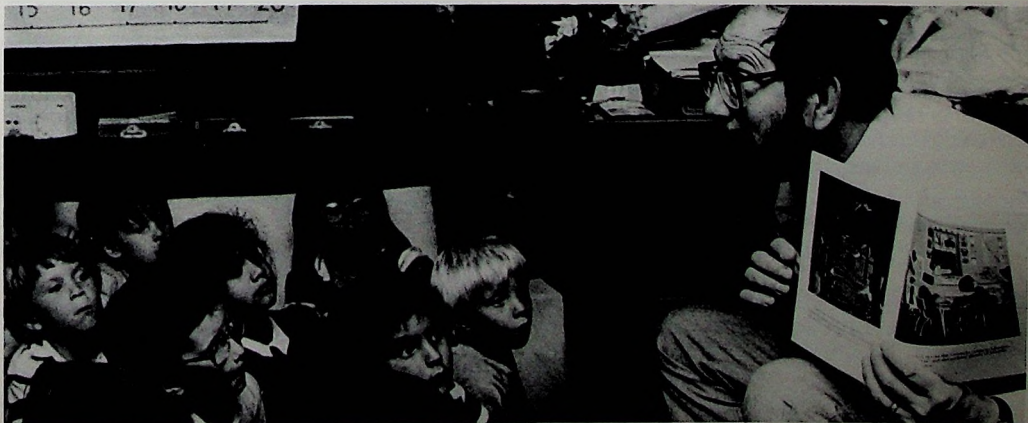
Does s/he produce ideas for group work?

Do words and actions come naturally?

* Communication

Is s/he able to communicate in writing clearly and legibly?

How does writing improve communication skills?



A group of ten year olds are studying Medieval Peterborough. A timber-framed house has been reconstructed in the open space between two rooms. A thatched roof encloses a table, chair, tools, farm implements and kitchen utensils. Boys and girls are sewing coloured fabrics to a large piece of hessian, creating a tapestry of the Cathedral and Abbey in the fourteenth century. The teacher is helping a boy to draw a family tree for John Carpenter and his family, who live in Cowgate. Children work on maps or their own illuminated manuscripts, plotting street patterns or chronicling the life of Abbot Robert of Sutton.

An animated group argue by the window. John Carpenter has heard from Richard the Innkeeper that many people in Cowgate and Cumbergate are falling ill. Is it the plague? Checking her rôle card, a girl insists John should pray for God's help; someone else scoffs:

"The best cure I know is to rub pig's heart all over you."

Others clamour for a move to Ely, or to board up the house or to sit tight until more is known about the outbreak. Eventually they agree to move and write up the reasons for the decision.

The teacher is called and reveals that the sickness has been caused by the butcher selling bad meat.

COMMENTARY

- *Topics are planned to span several areas of the curriculum through varied activities and techniques.
- *Teachers share research and preparation tasks, collecting a store of authentic materials and information.
- *Children rotate through group and individual assignments, producing rough drafts before decorating and mounting fair copies.
- *Pupils' finished work is displayed or stored in plastic stacking trays; progress is checked on the teacher's record card.
- *Number skills are developed through a parallel Mathematics scheme, and are then applied in context, e.g. to analyse death rates.

Questions parents ask:

- I would like to see my child's topic work and help with it. Is that possible? Can she bring it home?
- Can I come into school to see how you teach and organise topic work?
- Does belonging to the local library help?

The National Curriculum

- *History is a compulsory Foundation Study.
- *It can be studied as part of a thematic approach to the curriculum in the primary school.
- *No specific time allocation is recommended. History must be studied for a 'reasonable' proportion of time.

The comprehensive school across the campus has grown larger and closer as the fourth year has gone by. Now, at eleven, in their last weeks as juniors, they join two hundred other subdued children tasting life in a secondary school for the day. They have never seen so many people and corridors before. The Head greets them in the hall, holding a black-hulled yacht with orange sails.

"Think of it as an adventure. I picture myself very small, sailing a yacht like this. I stand at the helm, free as a bird, with spray in my eyes. The wind catches the sails and carries me across the ocean to a new world."

The visitors sample lessons, buy crisps from the tuckshop and find out what the cafeteria has to offer. There is a bewildering walk to the Art department where everyone designs a badge with a personal logo between glances at an old mangle at the centre of the studio.

Across the courtyard, in the workshops, the children have to build the strongest bridge they can from eight pieces of balsa wood and a tube of cement. The white-coated technician tests the results to destruction, chuckling as the structures crack apart. There are food tests in the Science laboratories and a quiz in history.

Brothers and sisters have told them stories about newcomers' heads being pushed down toilets; they are less inclined to believe it now.



COMMENTARY

*Primary and secondary staff teach in one another's schools. They meet in small groups to match curriculum needs and expectations.

*Joint activities, including a concert and a sportsday, bring pupils from senior and junior schools together.

*The head of the first year visits all the partner schools to collect information. She builds up a picture of the new intake.

*Primary teachers complete agreed language and number profile forms for each pupil to help the comprehensive start at the right level.

*A programme including at least a full day visit is one of the best ways to reassure children about transfer and to defuse their fears about being lost or bullied.

*Parents are given the opportunity to visit the school during the day and in the evening, and are given an attractively presented and full brochure about the school and its aims.

Questions parents ask:

When will I be able to visit the local secondary school(s)?

Can I come in with my child and watch some lessons?

What arrangements are made to give me the school brochure in advance?

How can I find out about the school's GCSE results?

My son is very worried about the size of the school. How is it organised?

Will anyone know my daughter and look after her?

Charts, graphs and coloured geometric shapes decorate a calm classroom. The children are working at their own pace on individualised study booklets from the School Mathematics Project (SMP 11-16). Two or three forge ahead to level 3 (a); a special needs support teacher sits with a slow learner, reading her a question from the booklet; a boy is taking the end of unit test for 2 (b).

The first booklet on 3 (a) is "Multiplication continued". Over Debbie's shoulder you can see two photographic enlargers. The left hand enlarger multiplies lengths by 2; the right hand enlarger multiplies lengths by 3. You enlarge a 1 cm leaf in the first enlarger. It is now 2 cms long. How long is the leaf you will get when the new picture is placed in the second enlarger?

Dominic puzzles over the last question in the booklet. "As I was going to St.Ives.... I met a man with seven wives. Each wife had seven sacks. Each sack had seven cats. Each cat had seven kittens. Kittens, cats, sacks, wives - how many were going to St.Ives? "

He is cross when the teacher tells the class to put away the booklets. It is time for an investigation. A card showing 5 horizontal boxes is pinned to the board. There is a coloured dot in each of the two left hand boxes; an empty central box; and a white dot in each of the two right hand boxes. What is the minimum number of moves in which the coloured and white dot can change places? Dots can only be moved into vacant boxes.

Each group of pupils bubbles with talk as people try out ideas. Which is the quickest method? Is there a method that works? A hand goes up

"Can a dot hop boxes, Miss?"

COMMENTARY

*SMP 11-16 is a nationally published mathematics scheme, with approved training courses and local users' groups to support teachers.

*Teaching style is altered by the project; there is little direct teaching and no working through of examples with the whole class.

*Careful record-keeping and administration are essential to manage pupils' progress through complex, interlocking booklets and accompanying assessments.

*Pupils move at their own pace through the project so that work is continuous, progressive and adapted to an individual's stage and pace of development.

*Investigations are designed to prompt groups to 'brainstorm' to solve problems, learning to communicate in mathematical terms.

The National Curriculum

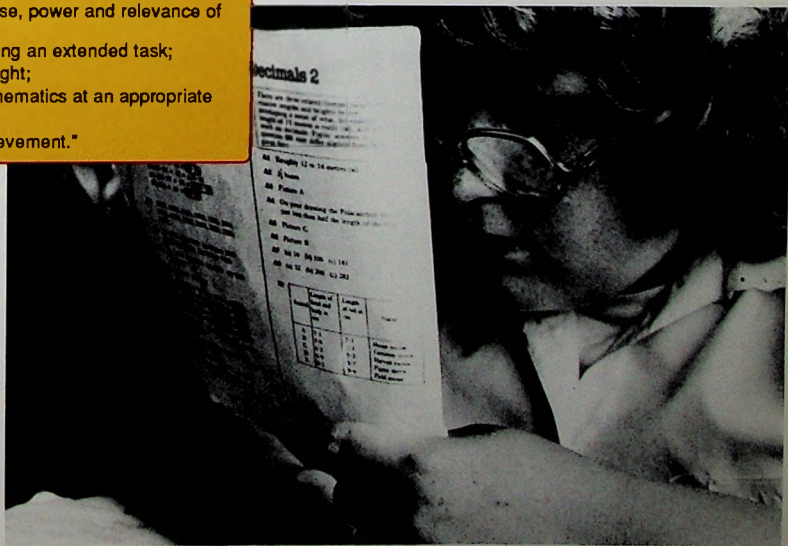
*Mathematics is a Core subject for all children from 5-16.

*Attainment targets in mathematics will be established for all ages by the National Curriculum Mathematics Group.

*Some children will begin to be assessed against the attainment targets in 1990 at the age of 7+. All will be assessed at 7+ by 1991.

*The National Curriculum Mathematics Working Group were concerned to improve children's attitudes to mathematics. They said: "Pupils' attitudes to mathematics affect their attainment in mathematics", so they recommend that the national mathematics curriculum should encourage:

- motivation and interest in the subject;
- pleasure and enjoyment from mathematical activities;
- appreciation of the purpose, power and relevance of mathematics;
- perseverance in tackling an extended task;
- independence of thought;
- confidence to do mathematics at an appropriate level;
- satisfaction from achievement."



Wednesday morning, half past nine. Through the woods near Cambridge a group of children run along twisting, leafy paths. It's chilly. They are all wearing tracksuits. Other visitors to the woods stare in surprise as the group shout and whoop their way around a familiar circuit of paths. All of the joggers have severe learning difficulties. These pupils, with a range of mental and physical handicap, could lead passive lives; overweight, sluggish and uncoordinated at performing basic motor skills, lacking in motivation to be active. Their week at school, however, is underpinned by a programme of physical education in which fitness and health are a priority.

Each PE session starts with a jog (10-20 minutes) round the local streets. Pupils try flexibility exercises and strengthening tasks. Gymnastics, games or athletics provide the focus for the lesson. Groups go on regular hikes, there are back-pack trips, camping visits (in term time), weekly swimming and riding, and, for some, skiing instruction on the nearby dry ski slope. Parents are involved in promoting fitness, learning themselves how to maintain and extend the work done in school.

A sixteen year old Downs Syndrome boy, who was overweight and poorly coordinated has lost 6 kilos in weight, runs for 20 minutes, swims, back-packs, is learning to ski, and can shower and dress, reflecting his all-round improvement in physical health and self-image.



COMMENTARY

*Special schools cater for pupils (from 2 - 19) whose special needs cannot be met in the mainstream.

*County special education stresses the development of basic motor skills, cooperating with physiotherapists to create individual programmes. Behavioural objectives are set to monitor progress.

*Health related fitness programmes are given a high priority.

*Mainstream pupils come into special schools for specialised PE sessions; special school pupils join mainstream PE lessons.

*A multi-disciplinary approach is favoured. Specialists cooperate to meet pupil needs through regular reviews, programme design and frequent discussions.

We are grateful to the British Journal of Physical Education for permission to reproduce this article, which was written up by the school originally in a fuller article.

The National Curriculum

*Although designed to be suitable for all children, some exemptions from some aspects of the National Curriculum will be available in a limited number of cases.

*The terms of the 1981 Act on special educational needs are not superceded: they still apply.

*Special Schools will continue to offer students a broad general education, taking into account each individual student's special educational needs.

Gustav Holst's 'Planet Suite' vibrates through the speakers, rising to a war-like crescendo. Children listen, feeling slightly shivery. As the sound fades, the art teacher asks them to imagine they are riding through darkness with Mars, God of War.

"What do you see?"

He has brought in warriors' masks, a shield, spear and sword. The pupils start work on scenes from space, sketching stars, planets and asteroid storms. Helmets and weapons are painted over a bright stellar background.

Later, they are in the music room. Each group is clustered round a table and the teacher asks what sounds they associate with the moon, stars and space.

"What noise does an asteroid make?"

"Isn't space quiet, sir?"

Children fetch maracas, castanets, drums, xylophones and glockenspiels, pushing them on a trolley from a walk-in cupboard down the corridor. Groups collect other instruments and practise sounds and rhythms. The teacher blows a whistle and makes everyone listen to something from each table. Pupils return to their experiments.

"Now write down what you've got."

The noise subsides as they compose their tunes.

COMMENTARY

- *The school believes that everyone can make music.
- *Activities and themes in the performing arts are planned and coordinated through the Art, Drama and Music departments.
- *All pupils are given the maximum opportunity to participate in a wide range of practical activities.
- *Extended themes or projects can lead to public performance e.g. in assembly or for parents.



The teacher calls the register and pupils reply in French.

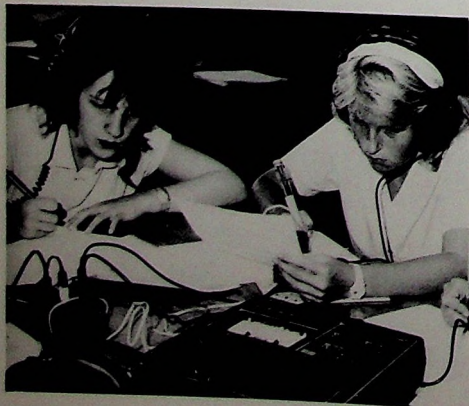
"Il est absent, madame."

She reminds the class that the aim of the lesson is to learn how to pay the bill in a restaurant. Home-made flash cards are used, each with a simple sketch representing the different phrases one might need to use in a restaurant.

The teacher shows the cards and gives the accompanying phrase: *"Avez-vous une table de libre?"* Groups of youngsters, (filles/garçons, cette rangée-ci) repeat phrases in chorus. The flash cards are numbered and put on the board. Pupils call out numbers and the teacher 'guesses' the right phrases. Then she holds up cards, e.g. *'Je voudrais une table pour deux personnes'*. Pupils read out the phrases and come to the board in turns to match phrase and sketch cards. Next, eyes are closed while the teacher removes written phrases from the board. Pupils say in French which has been taken -

"L'addition, s'il vous plaît!"

Sometimes pupils initially call out only a key word - 'carte de crédit' - but with quiet encouragement, manage the whole phrase. A short team game is played in which pupils recall a whole sequence of expressions.



COMMENTARY

*The children follow a course which emphasises a communicative approach.

*Teachers and Inspectors, supported by Barry Jones at Homerton College, Cambridge, devised the programme of Graded Tests, which goes to GCSE level. They also helped and trained teachers in other schools.

*Pupils take a Graded Test when they are ready, not at a set time. There are five levels of tests which include short-term and long-term goals for the pupils, and which help all pupils to study a foreign language throughout their secondary schooling, as the new National Curriculum requires.

*This lesson is for less able students. It develops and reinforces their ability to listen, understand and respond in French.

*When pupils can use the language confidently, they are tested. When they have completed a number of tests successfully, they are awarded a certificate showing the level they have achieved in the County's Graded Tests scheme.

The National Curriculum

*All pupils from 11-16 will study a foreign language. Students will not have the option to 'drop' a foreign language before the end of the fifth year.

*The main foreign language studied for 5 years is likely to be German or Spanish or Italian or French.

*A second foreign language can be studied outside the time allocated to the Core and Foundation Studies.

Tracey looks thoughtfully at the piece of plasticine she is moulding. Her partner pours a runny mixture of Polycell paste into a long glass tube, held upright in a retort stand. The children work in pairs to find out how long it takes different plasticine shapes to sink through the liquid. Ben is poised with a torpedo, waiting for a signal from Darren, who works the stop watch.

You'll need at least three tries with each shape," the teacher reminds them, as she checks the record of each trial.

"Hey, this one's quick,"

shouts Ben, after a second run with his torpedo. Other pupils test cubes, spheres, discs or flattened strips. Faces express frustration and delight as ideas succeed or fail. Lumps of plasticine come to rest on the cork bungs at the base of each tube and it is obvious that some are larger than others. The teacher interrupts:

"If one piece is heavier than the others, is it a fair test of the shape?"

The laboratory is busy and the teacher hurries from pair to pair, offering encouragement and sorting out problems. A cork is insecure and Polycell seeps over the bench. At the end, when they have cleared up, the class gathers around a small fish tank.

"Which shapes were best?"

The pupils discuss their designs and draw comparisons with fish, birds and animals moving through air and water.

COMMENTARY

*Science and technology teachers adopt an experimental approach to design problems.

*Technical assistants prepare necessary equipment and materials so that the teacher can concentrate on youngsters' learning.

*The relationship between form and function is explored and a variety of skills are developed.

*Children work in pairs or small groups so that discussion and cooperation are fostered.

*Hypotheses about improved designs are based on close observation and practical experience.

*Pupils learn to record accurately, calculate averages and make deductions from their results.

The National Curriculum

*Science and technology are compulsory studies for all pupils from 5-16.

*Students in secondary schools cannot 'drop' science or technology.

*Cambridgeshire has a policy of 'Science for all' currently being implemented. This is entirely in line with the National Curriculum.

*Attainment targets in science and technology will be introduced in 1989 and phased through the primary and secondary schools by 1991.

*The National Curriculum Working Group on Science recommends that secondary pupils' learning "should continue to be grounded in first-hand experiences. Pupils will need to be given opportunities to extend their knowledge of phenomena, to test out ideas experimentally, to develop practical skills and collaborative approaches to problem-solving."

MACBETH

Entitlement, Growth, Participation

Students are seated round a large conference table with their English teacher, examining a large ground plan of Macbeth's castle.

"I want you to play 'Cluedo' for a moment. Where are all the characters on the fatal night?"

Mark is one of the first to open the text.

*The King's a-bed ", at any rate
"And Macbeth?"*

They skim Act II scenes i - iii.

"He says, 'I go and it is done: the bell invites me."

"But who does he kill?"

"Duncan".

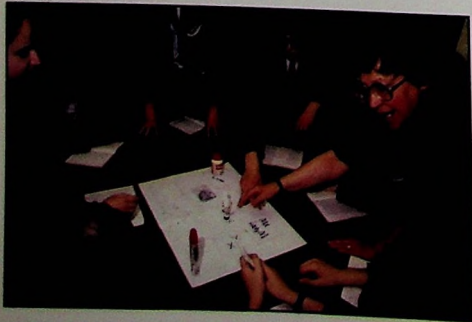
"And his attendants?"

Jane finds Lady Macbeth's line.

*"...go carry them, and smear
The sleepy grooms with blood."*

'Cluedo' pieces are moved as suggestions are made.

When the weapons and actors have been placed, the young people take roles. They must study the text, interview one another in character and prepare, as course work, a report on the murder.



COMMENTARY

*The English department prepares guidelines and units for coursework in literature.

*When units are completed, students write self-assessments for their profiles, e.g.

the task - what I did;

the skills I had to use;

the demands it made on me;

in what ways I was successful in carrying it out.

*Teachers grade the coursework, which is checked later by a moderator from the examination board.

*Teachers also assess the student's performance for the profile, noting knowledge, understanding, skills' development and response.

The National Curriculum

*The Committee of Inquiry into the teaching of English Language (the Kingman Committee) recommended that "wide reading, and as great an experience as possible of the best imaginative literature, are essential to the full development of an ear for language, and to a full knowledge of the range of possible patterns of thought and feeling made accessible by the powers and range of language." (Paragraph 21 - Kingman Report)

*They also expressed a concern that "a generation of children may grow up deprived of their entitlement - an introduction to the powerful and splendid history of the best that has been thought and said in our language. Too rigid a concern with what is 'relevant' to the lives of young people seems to us to pose the danger of impoverishing not only the young people, but the culture itself, which has to be revitalised by each generation." (Paragraph 22 - Kingman Report)

There are foreign signs everywhere and a multilingual greeting above the doors. The candlelit "Café Continental", with magazines on tables, is the centre of the evening. A fifth form waiter invites clients inside for a croissant, 'un sandwich au jambon', 'un Orangina'. Pupils help the uninitiated place an order. It is hot and sales soar.

Opposite, pupils perform sketches in various languages. Afterwards, parents can see photographs of French, German and Italian exchanges. Nearby is a display cabinet illustrating a typical German Easter, including decorated twigs. A Japanese pupil has taught first years how to make cards with origami bird decoration and these are also on display.

"Parlez-vous français?" "Sprechen Sie Deutsch?" signs in one room ask. Come and prove it! Talk to Florence or Brigitta, (the foreign language assistants who are helped by fifth formers.) Puppets, including a nurse, a vicar, a teacher and a policeman, made by third year pupils for future classroom use, are on show. GCSE work is mounted on pinboard and features French-style school reports written as self-assessments. A computer is in action.

The last display is headlined: "**Modern Linguists reach the jobs others can't reach!**" It contains enlarged job advertisements from newspapers and articles and letters about industry's need for fluent linguists at all levels.



COMMENTARY

"The school is eager to involve the local community in its work and helps students develop self-confidence through public events.

"Vocational guidance is designed into the curriculum process for senior pupils.

"The curriculum is relevant to business needs but encourages pupils to think independently and undertake their own initiatives.

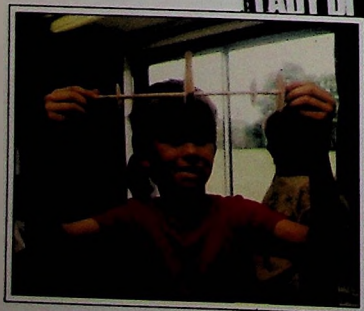
"Students are encouraged to value languages and cultures other than their own through practical experience, including exchanges and simulations.

Questions parents ask:

Will my child continue to get good further education and careers advice and guidance when the new Education Act takes effect?



PART 2



CURRICULUM POLICY - HOW WE MAKE IT WORK

Each of the scenes you have just read shows how the educational POLICY and VALUES described in the introduction can be realised through well-organised school practice. A broad range of subjects and activities is needed, however, if the right balance of topics, activities and skills is to be achieved. The aim is to introduce students to the principal important areas of human knowledge, encourage them to acquire a broad range of skills and contribute to their personal and social development, their attitudes to life and learning.

Seven Aspects of Development

The Cambridgeshire approach to this task is based upon seven aspects of development, which are inter-connecting and support each other:

AESTHETIC & CREATIVE art, music, drama

LINGUISTIC language

MATHEMATICAL number, space, statistics

PHYSICAL physical activity

SCIENTIFIC & TECHNOLOGICAL science, technology

HUMAN, SOCIAL & POLITICAL history, geography,
social science

SPIRITUAL, MORAL & ETHICAL religious education,
personal development

These seven aspects of development can be taught through the whole school programme. For example, JOHN'S DILEMMA (page 16) develops knowledge and ideas in a number of areas through varied activities. But in that example, the aesthetic element (illuminating manu-

scripts, classroom decor) is relatively weak compared with the Human Social and Political - the content is mainly historical and a school would be eager to choose the next topic with a different emphasis in mind.

Skills, Ideas and Attitudes

A similar framework is needed to ensure that activities are selected to foster a wide range of skills, concepts and attitudes. The examples demonstrate how lessons are planned to help pupils acquire relevant skills and positive attitudes. Teachers must plan so pupils can be:

1. literate and numerate in a variety of expressive and practical contexts;
2. experimental, able to question and design practical solutions to problems and to control phenomena, especially various forms of energy;
3. rational and analytic; able to recognise and interpret patterns;
4. enquiring, flexible, imaginative and independent but able to sympathise and work effectively with others;
5. skilful and creative with tools, equipment and materials;
6. mobile and dextrous;
7. aware of nutrition, health and fitness issues;
8. confident in decision making and communicating.

Part 2 of this book shows how these elements are interwoven in a child's school programme to guide the selection of topics and ideas, to lead him or her through a variety of activities to the development of appropriate skills and attitudes.

Activities should be chosen to develop skills and attitudes within and across the seven main areas of development. "What we saw at Stibington", for example, shows how children were helped to practise a great range of skills and to ask and answer a variety of questions.

**What we saw
at Stibbington**

Linguistic	- write, discuss
Mathematical	- count, record, analyse patterns, similarities and differences
Physical	- pond dip, walk
Aesthetic & Creative	- sketch, colour, draw shapes
Scientific & Technological	- observe similarity, differences - analyse patterns, functions
Human, Social & Political	- become aware of the environment - live away from home, respect others
Spiritual, Ethical & Moral	- respect living things, the natural world and their relationships to it

A similar chart could be drawn for each of the scenes in the first part of this book and teachers should be aware of the need to select topics and activities which will allow children to achieve the right balance of skills, attitudes and curriculum areas. The examples which follow are grouped to represent aspects of development and show how they are related to a broader strategy for the County.

WHAT EACH PAGE WILL SHOW IN PART 2

Case Study -

A short description of effective teaching and learning within one of the seven areas of Development

Context -

Where the case study fits in the subject programme *or* theme *or* topic

Analysis -

How the case study reflects best teacher method, use of resources and links with the school's overall objectives/ National requirements, GCSE etc.

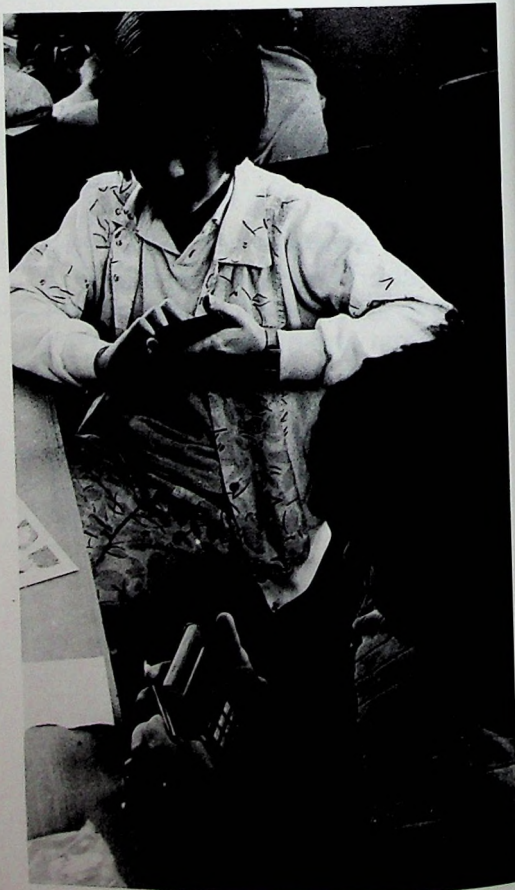
HOW THIS BOOK CAME TO BE WRITTEN

Teachers, Inspectors and Officers visited a large number of Cambridgeshire's schools and colleges between February and June 1988 to collect examples of good practice and identify the features underlying successful lessons. The aim was to look at teaching and learning to pinpoint the reasons why children were fully involved and enjoying learning in that particular classroom.

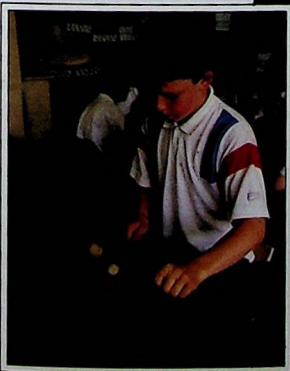
We hope to point towards a County policy on educational practice for the future - one which will match with the aims of the new National Curriculum while retaining those important features which characterise past and present practice in this Authority. In this way we will serve Cambridgeshire's children well.

The section which follows is based on the reports of the groups who visited schools, and we are most grateful to them for their work. It is principally intended for teachers in schools and colleges. Many other examples were also collected during the course of the visits and some of these will be incorporated into the guidelines to be published next year.

Examples for each aspect of development have been included to illustrate more fully the quality of teaching and learning in our schools and colleges. They suggest how we can, in the future, relate school and college activities to a broader, long-term strategy for a coordinated County curriculum, which also includes the requirements of the National Curriculum and the Technical and Vocational Education Initiative - TVEI.



THE CREATIVE AND AESTHETIC



"I like working outside because I like drawing and painting things that nobody has seen before".

Gail, aged 8

Context

Eight year old pupils are working in the school's flower garden. Here the children are learning to look very closely, and given the time not merely to see but to understand form, texture and colour and to show these in drawings and paintings. Their attention is gently drawn to essential detail:

"Did you notice what's in the middle of the rose?"

"What can you see on the leaf? Is it plain or has it got anything on it?"

"Lines."

"Yes, veins are lines."

"A big vein down the middle"

They are helped to overcome technical difficulty.

"See how the petals are very shiny. Well, if you mix a little PVA glue with your paint - it'll go shiny."

Analysis

Children who learn to look DISCOVER

Children who learn to look learn to QUESTION

Children who learn to look begin to UNDERSTAND

Looking leads to the ability to express responses visually, verbally, technically, literally, factually and personally.

Looking leads to spiritual, scientific and historical experience.

Looking leads to comparison and discernment.

Direct experience strengthens meaning and leads to expression.

Looking through drawing prolongs the looking.

Looking encourages concentration.

Looking absorbs, calms and sensitises the child.



..From a distance, the paintings looked like huge photographs, but close to, they were textured, you could almost pick each head of corn from the canvas. It was quite a surprise.'

Robert, 12 years

Analysis

An increasing number of schools want to take advantage of Artists-in-Schools schemes, the developing education departments in museums and galleries, the County collection of original works for children, and museum loan services. This enables pupils to see their work in relation to others, rather than in isolation.

Pupils' sensitivity to the world around them is heightened through their understanding of artists' responses to that world.

"Participation and appreciation are complementary aspects of arts education; not one or the other, but both"

***Gulbenkian Report on the
Arts in Schools- 1984***



Andrew and Stephanie are 5th Year secondary pupils helping each other finish ambitious screenprints based on studies of entrances and doorways found in the immediate locality.

Context

The original drawings from observation and the subsequent stages in the design process are on display in the workshop. A wide range of already completed prints shows how artists from different times and places used the same themes.

The teacher was occasionally consulted on a technical matter; there was a sense of shared enterprise. The teacher was ready to demonstrate processes and to work with materials as an extension of his oral presentation.

The teacher gave clear and unambiguous instructions to his pupils whenever that seemed appropriate. The steps they needed to take to master a skill or idea had already been analysed. In the early stages of the project, lessons concentrated on the major task - the necessary techniques. This created the opportunity for more genuine individual freedom subsequently, since it was based on technical competence.



Analysis

One important successful element seemed to be the language used by the teacher - encouraging, motivating, precise and illuminating. Descriptions of subtleties of colour and texture, for example, helped pupils become aware of these qualities and more able to search them out for themselves. This was achieved through class discussions. The teacher helped develop the ability of the pupils to discriminate, characterise and judge for themselves.



HOME ECONOMICS *Fabrics, Textures, Shapes and Colours*

As the children entered the room their eyes widened with amazement. Before them was an Aladdin's cave; around them were displays in every available space. Windowsills were crammed with shells, pebbles, stuffed animals. Seed heads were arranged surrounded with crayons in the same colour range; fabrics, wools and examples of other children's work. On the other windowsills were baskets containing wool - each basket contained one colour in a variety of textures and thicknesses.

"I can see you are very careful children, so you are allowed to touch anything you like. Please leave things as you have found them."

The children touched, stroked, picked up objects and explored the room for ten minutes, responding to the trust placed in them. They could see that everything was ready for something exciting to begin - pencils were sharp, fabric was in frames, wax was melted and the iron was warm. They couldn't wait to begin.

Context

The children were visiting the rural support unit with their teacher. They had come for the day to explore and begin some project work which they would take back to their own school to finish. They were given a choice of activities and received clear, careful instructions about how to use the materials available. They could explore the idea of water through batik upon which they could embroider when the design was complete, use hessian mounted in a ring as the base for a design using wool and real or invented stitches, or choose scraps of material and threads or wool to interpret the idea. Every child was absorbed for the four hours.

Analysis

Much of the power of the experience came from two things. The first was the enormous attention to detail, preparation and planning which had taken place before the children arrived. The learning environment was vital, colourful, magical.

The second major contribution was the teaching style adopted - throughout the period only positive, encouraging statements were used. Work was valued and supported and the careful preparation and unobtrusive supervision combined to create an atmosphere of freedom and creativity. The careful choice of colour-sorted, varied fabrics and threads ensured rich pieces of work in all colour combinations. Every piece of work was different and special. The children took their leave regretfully, but were proud of the work they had started.

MUSIC IN THE WHOLE CURRICULUM

The Dragon Dances to the Sound of the Gongs!

These twelve year olds are involved in a project on Javanese Gamelan Music which will lead them into an understanding of tone colour and musical structure, as well as an appreciation of music from another culture.

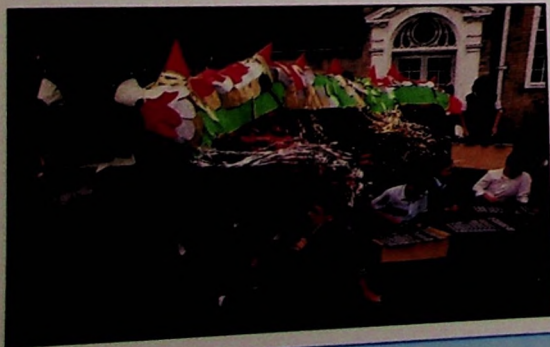
Context

They work in groups and ultimately as a class or combination of classes, with pitched percussion instruments, gongs, cymbals and hand drums to produce music in the style of Balinese and Javanese island people. This is music which uses carefully prepared rhythm and pitch patterns and includes opportunities for improvisation. The five week project will involve the class in a particular culture where the music is used for religious and secular festivals, for dance and for street music, all through the medium of musical composition. The culmination is the production of a piece of shared composition to which a huge and colourful dragon, made by the children, performs a dance of purification.

Analysis

Although this is a music project, every opportunity is taken to broaden children's awareness, dramatically, geographically and culturally. During the project, children demonstrated a respect for and reliance on each other as they worked towards a common objective. With the assistance of friends, it was possible for a hearing impaired pupil to make a creative rhythmic response.

There was a high level of enjoyment and a sense of achievement as the project reached its conclusion in the dragon dance, which was viewed and discussed by all, having been videoed in final performance.



The setting is the village college on a Saturday morning - and everything is happening at once. Children from the College and the local primary schools together with parents and other adults are involved in a variety of music making activities, including Junior and Senior Orchestras and advanced string and wind ensembles.

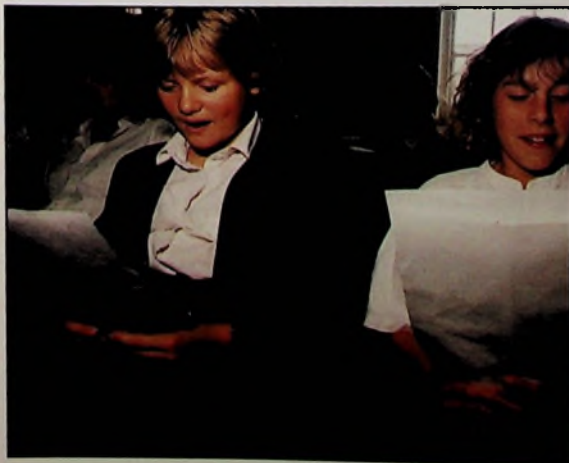
Context

This scheme aims to take music learners from the earliest stages right through to very advanced work. Groups are directed mainly by members of the College's music staff and children and parents alike respond very positively to what their Saturday music school can offer them.

Analysis

The scheme is valued by the local community for the musical opportunities it offers, but there are other, non-musical reasons for the scheme being such a success. There is a very strong feeling that the music 'belongs' to the community as well as to the individual learners, especially when it comes to performance. It also increases the self-confidence of all the musicians involved, young and old.

It is yet another way in which the village college is even more 'part of the local scene' than its Monday to Friday role alone would allow.



MUSIC

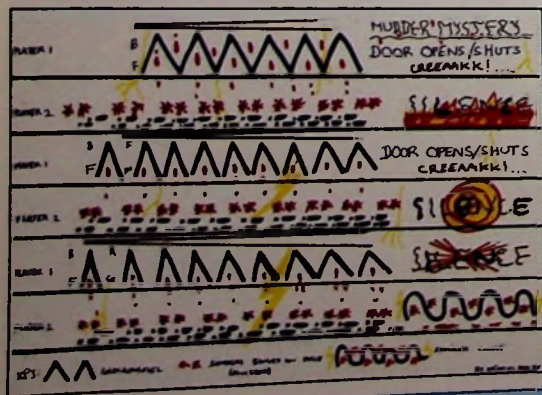
Children as Composers

In recent years, there have been many changes in the ways in which music is taught in schools, especially to those who don't aspire to be instrumentalists, but who will gain a great deal of musical appreciation and pleasure from understanding that music is a complex form which communicates between people.

Many of these changes have been incorporated into the new GCSE examination and encourage students to compose, using whatever notation helps them best to communicate their music.

Context

This graphic score was produced as a result of preparatory work on composition. The stimulus was "Ghosts" and was told as a story to the whole class. Under the student composer's direction the piece was then rehearsed, adapted and performed by a group of fellow musicians in the same class.



Analysis

The student produced his own musical composition which made sense to his fellows without previously having learnt conventional notation. The piece is a direct response in sound to the story "Ghosts". Other players could accept the way in which the music was presented without difficulty and the composer offered a range of musical expressions and symbols with form, shape, tone-colour and contrast by direct means in music. In writing and performing, this exercise gave the young composer an insight into the difficulties of representing sound images to performers.



DRAMA

Rôle Play to Develop Ideas

We pray thee O Lord, not that wrecks should happen, but if wrecks should happen, that Thou guide them to the Scilly Isles for the benefit of the poor inhabitants.

This 18th Century prayer is the stimulus for a drama project. Sounds of a rough sea and a ship running aground pervade a drama studio where a class of pupils are preparing to make a treacherous journey down to the base of the cliffs. The year is 1756 and the pupils are the impoverished inhabitants of the Scilly Isles. They proceed in poor visibility to plunder the wreck of the ship.



Context

This was the second of five sessions of a project entitled "The Wreckers", which formed part of the Humanities Curriculum for lower secondary school pupils. The project was devised by two teachers with the aim of promoting moral questioning amongst the pupils.

Analysis

The sessions were carefully structured by the teachers, who focused and advanced the work by taking on various roles, such as a Customs and Excise Officer, a villager, the local vicar. Pupils became totally involved in both the drama and subsequent discussions, developing their ability to place themselves in the situations of others in order to consider their problems. Their ability to work creatively and productively together in groups was very evident and the project served to deepen their understanding of the human condition.

DRAMA

Rôle Play to Solve Problems

A school hall has become a village and a class of children the villagers. Each inhabitant has his/her own occupation and is very busy. The teacher is also one of the villagers, who has just discovered two rats in her kitchen. Within no time at all, everyone is discovering rats and we have a situation akin to that in the Pied Piper of Hamelin. The teacher has now become a press photographer and moves around taking photos and interviewing the villagers. The children have a problem - How to get rid of the rats. They demand to see the mayor, which role is rapidly undertaken by the teacher, who, unfortunately, has no idea of how the problem is to be solved and asks them to present ideas to her. The children are getting together in small groups and are enthusiastically discussing possibilities. Some have started to design traps on pieces of paper. Will they work?

Context

This piece of drama work took place in an infant school in order to initiate topic work. The intention was that the work would develop into the exploration of a variety of themes such as pest control, the morality of not keeping a promise, loneliness. It was also intended that art work, maths, science and story would be involved.

Analysis

Negotiation in groups is not easy for infants but they were coping well with the demands for cooperation, problem-solving and making decisions. This was a good example of the teacher promoting learning areas by working in role within the drama. Language development was very evident, for instance, in the children's responses to her as a press reporter asking questions. The children were not short of ideas for inventing and drawing traps, but these also had to be described and questioned, a process which sent many back to the drawing board.



THE LINGUISTIC



ENGLISH

Poetry with Older Juniors

In this class of older juniors, poetry is a medium through which children discover and develop notions about themselves, their world and their language. It is an important and at times a profound part of the child's learning throughout the school year.

Context

There is a good collection of well-thumbed poetry books next to the teacher's desk. The teacher makes it her business to get to know these books so well she can locate a poem whenever the need arises. What she seeks to do is to make a connection between what the child is thinking and talking about at any given moment with a poem which will encapsulate an aspect of it or provide a different angle of vision. For example, a project on birds elicited talk of birds of prey, which was then linked to Tennyson's "The Eagle" - something unplanned but very much prepared for by the teacher. A study of owls had, as part of it, a selection of poems about owls. The children soon learnt that poets think about the same sort of questions as themselves and often provide illuminating answers or at least experiences; poetry becomes a source of enlightenment; connections are made. Just as they might have learnt to consult reference books for facts, so they learn to consult poetry books for feeling and vision and the kinds of language and understanding rarely found in reference books.

Analysis

In order to make poetry part of their learning and development, children are encouraged to make connections and to respond spontaneously to the stimulation offered even by longer and more exacting poems, which one might think too advanced for this age group. When this group read together Coleridge's "The Ancient Mariner", they were able to respond creatively with a week long court-room drama!



*Thunder, thunder, kill my daughters
Strike lightning and crack the wall of the court
Strike fire and burn my kingdom
Kill my daughters with the thunder
Spit Spit fire
Lightning crack trees and fall on the kingdom.*

*Rain rain go away before I die
blow blow blow and kill me
Flood my kingdom
flood me and kill me
Kill my two daughters because they were lying
Thunder don't kill me.*

This poem was written by a seven year old for whom English is his second language, after hearing the text from the storm scene in King Lear.

Context

A primary school project on 'King Lear' began with an actor/teacher in the character of Lear's Fool coming into their reading lesson, looking for King Lear. He then told them Lear's story to the point where Lear had gone into the storm and The Fool had lost him. Neither Shakespeare nor a play were mentioned. As far as the children were concerned, King Lear was real and so were the other characters they were to meet. They quickly became involved with the world of King Lear as an extension of their own play. They later 'met' King Lear by saying his storm words:

"Blow winds and crack your cheeks, rumble thy bellyful, spit fire, spout rain."

After hearing Lear in the storm they wrote their own poems to accompany their storm pictures.

Analysis

This short extract from a major project shows how, tackled enthusiastically, Shakespeare in a primary school can be enormously rewarding. Children are being caught at an age when attitudes are forming and imaginations are ripe. Providing that the text is handled selectively, children have little difficulty with the language.

A Shakespeare play is also a huge resource for the development of children's language and creativity, poetry, drama, dance, music, art and craft.



ENGLISH

Listening to Stories Tells Quite a Tale!

A class of 6-7 year old children are engaged in a topic on "Grannies and Grandpas". They are involved over a period of a term on activities such as:

Listening to stories about grandparents, telling and writing their own

Listening to stories told by grandparents during visits to the classroom - some of them in community languages

Visiting the College of Adult Education to see and join in the classes for retired people

Preparing a questionnaire to send to their grandparents

Finding out and mapping where grandparents were born and where they live now

Painting 'live' portraits

Collecting as many words for grandparents as possible eg Nonno, Pops, Pappy, Grandad, Nanaji, Baa etc and making them into a mobile

Writing to grandparents inviting them to tea

Cooking pizza, pakora and fairy cakes for tea

Teaching grandparents to use the classroom computer

Learning to count in the languages of grandparents when they visit the classroom

Collecting 'Things our grandparents say' and presenting them as speech bubbles next to collage pictures

Talking to grandparents about their memories of childhood and school

Dressing up as grannies and grandpas and role playing

Looking at how grannies and grandpas are represented in books and checking this against their own experience

Making graphs of grandparents' ages from information received on questionnaires.

During the graph work, monolingual children were heard to use such words as Dadaji, Bapaji etc. - words for grandparents in the first languages of children in the class - in a natural way, e.g. "Who is the oldest?"

"Oh, yes, Naniji Begum - she's 72."

When writing letters of invitation to tea, one child wrote,

"Dear Nonno and Nonna,"

the Italian words for grandparents, with pride and naturalness.



Analysis

The example of monolingual children using community languages naturally is achieved by:

- a. the school having a clear aim for topic work and using it as a vehicle for the whole curriculum:
- b. the school having basic principles which give a framework for the teacher to select the topic and for its development.

Topic work should:

- be based on the children's previous learning
 - be centred on practical activities based on first hand experience
 - provide the opportunity for children to develop a positive self-image
 - provide the opportunity for children to communicate with others in a variety of ways
 - provide the opportunity for children to play and work independently of their teacher
 - encourage children to respect other people.
- c. the teacher, having selected the topic as appropriate for her class, particularly desires that it should:
- provide closer links with the community the school serves
 - form a bridge between home - the extended family - and school
 - give purposeful talk a high priority
 - involve the children in working together
 - give practice in all the basic skills of handwriting, presentation of work etc
 - ensure that the cultural and linguistic diversity in the class is valued .



ENGLISH

Creative Writing in GCSE

"It was a sad day when war broke out and Britain was at war with Germany. Very soon we saw the Reservists going off after being called up to report at once to their regiment. Most of the men were carrying a kit bag on their shoulders and within a few days wounded men had started to arrive at Cambridge station. They were mostly Belgian forces who came first. Cambridge hadn't enough ambulances so the different shops lent their vans to bring down the wounded, like Eaden Lilley's, Robert Sayles, Joshua Taylor and Barretts. I think most of these were horse-drawn and the hospital was soon full up. Then Trinity College opened their grounds and tents were put up and the wounded laid inside. At that time, a military Hospital was started in Burnell's Walk where now the University Library stands. They worked on the hospital night and day and there was room for over 1000 beds. Of course, it was all made of timber. It soon filled up with wounded soldiers from all over the country. Most days, you could see a military funeral go by, one of the wounded men had died. We also had a lot of soldiers billeted in Cambridge, chiefly Welsh Regiments.

One day a whole Battalion came in and it reached 12 miles. I remember the bands playing them in from Trumpington Road and they had to pitch tents and sleep on Parker's Piece until billets could be found for them. My friend in Victoria Street had ten billeted on her. I went in one day and there were ten men sitting round her kitchen table. Their rations were delivered daily - lots of cereals, peas and lentils, bread, marge and bacon."

From the diary of Mrs. Starling - Cambridge



Context

The English Department of a Cambridge Community College has chosen to include some work on the literature of the First World War in the programme for students of GCSE English Literature.

The teachers have prepared a booklet which includes a range of material such as archive evidence from the locality, poems by men and women and views of the war from civilians, VAD's, munition workers and soldiers.

The students find the range of historical source material and creative writing available to them very stimulating, and they can relate their own work to their history courses, and even in some cases, to the memories of members of their own families or neighbours.

Analysis

The students' responses to the subject included a letter to Baroness Orczy to her call to the women of England; a letter from Mrs Webb of Cambridge, replying to the letter from her son, using the information about the war in Mrs. Starling's diary; simulating a Parish Council meeting in 1918 when returning soldiers were interviewed.

Students had read "Arms and the Boy", and "Send off" poems, diaries and speeches from the time, articles in newspapers and popular songs.

The students own creative writing was informed by both the literature of the period and the original sources, which assisted them in responding from a point of view of considerable depth of knowledge of the period.

A Guten Tag!
 B Guten Tag!
 A Woher kommst du?
 B Ich komme aus Köln.
 A Ach nein. Danke schön. Auf Wiedersehen.

A Hallo!
 C Hallo!
 A Woher kommst du?
 C Ich komme aus Salzburg, in Österreich.
 A Ach ja.
 C Und woher kommst du?
 A Ich komme aus Bristol.
 C Ach, wie heißt du?
 A Ich heiße Janet. Und du?
 C Ich heiße Gisela.
 A Und wie alt bist du?
 C Ich bin zwölf Jahre alt. Und du?
 A Ich bin elf Jahre alt.

Context

These conversations took place within a first year mixed ability group towards the end of their first month of learning German. The different elements of the conversation had initially been presented and practised separately using OHP transparencies and authentic recorded and reading materials. A variety of pair work activities enabled pupils to practise the new language thoroughly and to feel confident. All the teaching was done in German.

The conversations were part of a class activity in which each pupil was given a card with imaginary details of name, age, where they lived, and where the exchange partner lived. Half the pupils lived in the British Isles and half in a German speaking country and the task was to find one's partner. To do this, they had to greet other pupils in turn and ask where they came from. When they found someone from the town mentioned on their card, they then asked their name and age and wrote down the information. During the activity the teacher moved around, listening in to conversations and informally assessing a number of pupils.

Analysis

The conversations highlight two important characteristics of good language learning: that there should be a "real" information gap", i.e. pupils are not asking questions to which they already know the answer; that pupils go beyond practising elements of language in isolation but use the language to communicate in realistic situations.



Un Journal Archéologique

1918

Nous avons mangé un petit déjeuner;
des œufs, et du pain. Nous avons
mis un short bleu, et un t-shirt
rouge, et des belles, jeup

Puis nous avons pris
nos outils. Nous avons lampé au
gisement archéologique. Puis
nous avons pris beaucoup de photos.
Puis nous avons trouvé le
bracelet de Toutankhamon.
Nous avons dormi à midi, il
faisait très chaud. Nous avons
bu du champagne. Nous avons
exploré les environs de la
pyramide. Le soir nous avons
mangé un grand dîner.

SECRET

Context

This diary entry was written by a third year secondary school pupil as the final activity in a teaching sequence which aimed to consolidate and extend the use of the perfect tense. The lesson started with the French assistant recounting in diary form 'a journey of discovery' which she had made, with visuals on an overhead transparency to support comprehension. Some of the language was familiar, some was new. Pupils were then given a strip of transparency and they worked in pairs to produce their own diary with accompanying visuals. These were presented orally to the rest of the class. The teacher then showed the class some 'ancient documents found in an old chest' which included pages from an explorer's diary and introduced an activity which enabled pupils to focus on the written form of the new language. For homework, pupils had to write their own diary entries and present the work in the form of an ancient document, (by baking their paper in the oven or staining it with coffee, etc.)

Analysis

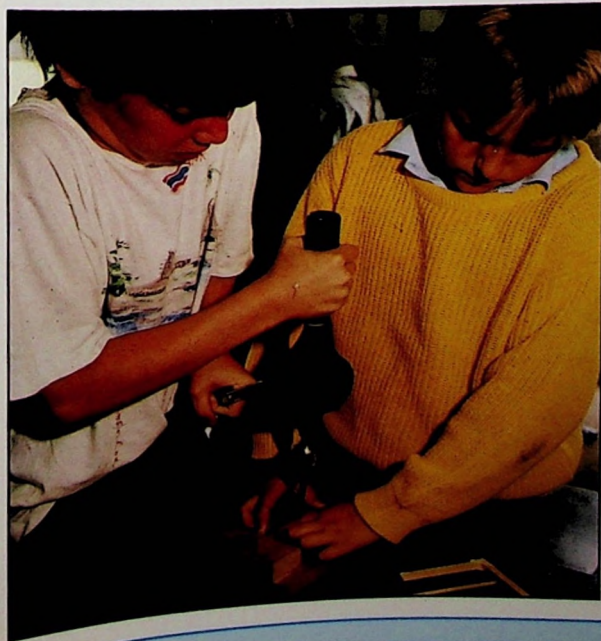
This sequence of activities highlights the importance of thorough practice of new language, of presenting and using the language in a meaningful and enjoyable context and of the need to offer pupils the opportunity to use the foreign language creatively as well as in everyday situations. It also shows how a resourceful teacher will borrow ideas originally used in other areas of the curriculum.

THE MATHEMATICAL

Maths for Real Lives!

The teacher asked her class of second year secondary school pupils to choose and tackle a 'real' problem together. There was a lively discussion during the course of which many ideas were aired and rejected because the 'problem' they represented was either not real enough or it was beyond the teacher's control.

Eventually, the children chose to work on the theme of Lockers, because there were none in the school and this made their lives difficult at times.



Context

The first job the children undertook was to justify the need for lockers.

Ideas varied from notions of security to practical ones like these:

"You can't hang jellies on pegs in the cloakroom!"

"I'm fed up with carting my football boots around all day."

The children broke the problem down. They set up groups to investigate the different aspects of their idea. The groups were Communications, The Children's Needs, Finance, What's Available, Is there Space? Management Department.

Each group set about collecting information and analysing it. The Children's Needs Group sent out a whole school questionnaire which needed statistical analysis, and had the added complication of ending with a multiple choice question about the notion of a fair rent.

The Communications Group, with the help of the school secretary learned to use the word processor so that their letters could look good.

Eventually each group reported and made recommendations to cover

siting and number of lockers

size of lockers

a rental scheme

This last would generate income to pay back loans and purchase further lockers.

Analysis

This work was aimed specifically at obtaining relevance in mathematics and fostered also the skills required for group work and problem solving.

The considerations were these:

- what has to go into each locker?

Skill to be practised - collection and analysis of data, use of percentages, use of graphs to display results, interpretation of results from questionnaire

- what space/volume is required for each locker, internal and external dimensions?

Skill to be practised - the four rules ($+$, $-$, \times , \div), comparison with manufacturers' standard sizes, calculation of maximum and minimum volume for given amount of material/shape/value for money

- how should the lockers be arranged? will the shape chosen tessellate?

Skill to be practised - measurement, scaling, modelling, tessellation

- what is the average maximum and minimum height that the lockers should be placed at?

Skill to be practised - measurement, averaging, e.g. on the average reach of the members of the class, idea of minima/maxima.

The Principal gave his support by negotiating with the children a loan from school funds which together with a loan from the PTA enabled purchase of lockers. There was an immediate over-subscription and it is anticipated that more lockers will be purchased next year. The maths was done, the company set up and a successful trading year resulted.



THE MATHEMATICAL

Spatial Activities - Learning to Solve Problems

The children of a junior class are engaged in various activities which will provide them with experience of the properties of solid shapes. All these activities relate to their topic on "Buildings".

One group is modelling using dowel of various lengths, and connectors which can be used at different angles. They are experimenting to see which solid shape frameworks they can construct using twelve rods.

Some combinations don't work; they have to take apart, adapt and change ideas. They work cooperatively, talking, self-criticising and helping one another.

Later, the whole class is sitting together in one corner of the room - the 'dowel group' are sharing their findings. The teacher asks key questions to encourage the children to think further. Each child is given plenty of time to respond and describe their observations in their own way.

"Tell us what you know about your shape.

Does anyone know any more?

What does the shape remind you of?

Are all the shapes the same? Why not?

Does it matter which corners you use?

Can you always make several shapes with each number of rods? What would happen if we used a different number?

How can we record what you have found out?"

The children suggest various forms of recording. Some want to write, others to draw their models. The latter method generates a fresh problem. How do you draw something solid?

Analysis

Children of all ages need to manipulate materials to solve mathematical problems. To develop spatial ability, they must construct. After experimenting, talking about the experience enables the child to consolidate her ideas. Children need time to develop confidence with the unfamiliar language of mathematics. Listening to other people and questioning develops mathematical thinking.

The quality of the teacher's questions determines whether problems are opened up, allowing for a variety of approach and depth of response. The process then is DO, TALK, RECORD.

The children are thus encouraged to go through all of the following stages;

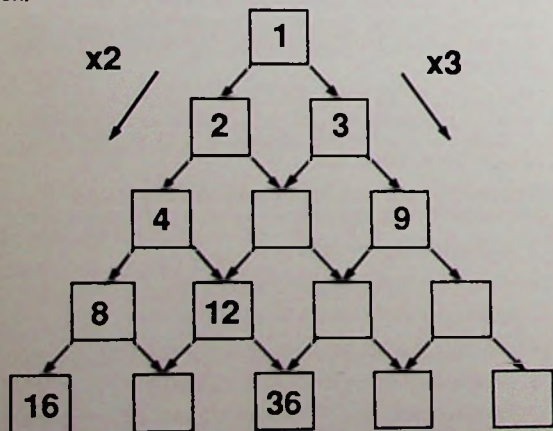
- 1 understanding the problem
- 2 studying it from every angle
- 3 looking for more than one way to solve it
- 4 choosing the solution they feel happiest with
- 5 using their method to solve the problem
- 6 reviewing the result

THE MATHEMATICAL

Using Number in the Primary School

Schools have to find interesting yet reliable and straightforward ways of getting children to practice the four rules - multiplication, division, addition and subtraction. One class observed was using this simple device for practising and at the same time creating the opportunity for understanding the structure, pattern and behaviour of number.

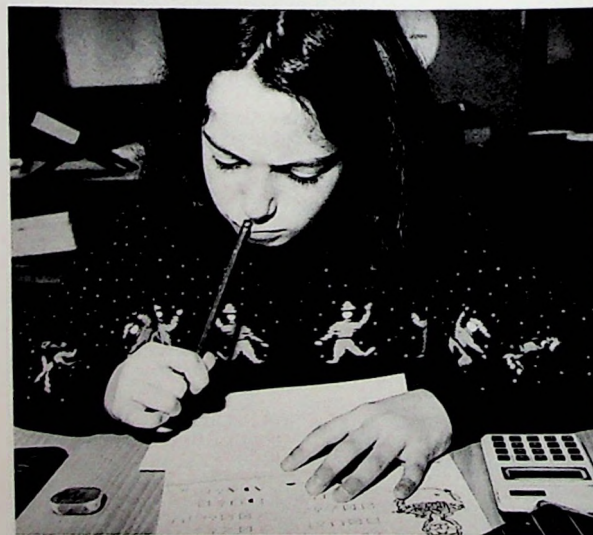
This illustration is concerned with multiplication and division but a similar diagram can be used for addition and subtraction.



Analysis

This activity is suitable for all ages from top infants to top juniors. The level of difficulty depends on the initial numbers chosen and the type of operation involved.

In the past a child may have completed a page of fourteen unrelated sums, all involving a single operation.



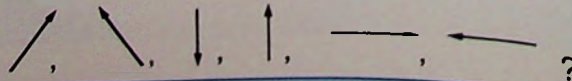
Instructions

Start by placing a number, in this case, number 1, in the top square. When following arrows in this direction

the previous number must be multiplied by 2

For arrows in this direction, multiply by 3.

Fill all the squares in this way. What operations would you need to perform when following these arrows?



THE MATHEMATICAL

What Can Calculators Do?

The PTA in a primary school decided on the recommendation of the maths teacher to buy 100 calculators for the children's use. Would they make a difference to the way children progressed in maths or not?

Context

The calculators were shared amongst the classes so that all classes had a small set and there was one large set left over for when a whole class needed them.

Teachers and parents wanted the children to be able to

- do sums involving real problems
- develop their mental arithmetic
- learn about place value
- improve their ability to estimate
- develop their own algorithms.

An example of a problem set which everyone knew how to tackle when the project was complete is as follows:

Use only these keys on your calculator:



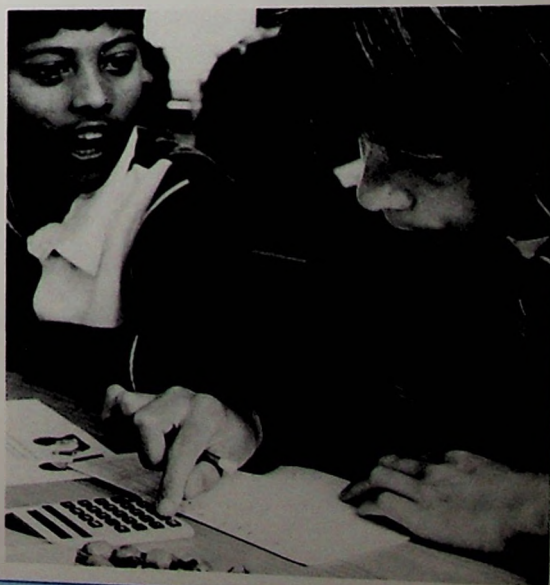
Make the calculator display each of the numbers 1 - 12.

Record your solutions.

A whole week of afternoon workshops was run when parents joined their children to work with the calculators to discover what new things they could do using the calculator. Three parents evenings were also held.

Analysis

The school hoped that at the end of the project the children would be able to use the calculator sensibly to decide upon the appropriate calculation and estimate the answer to the sums. They had also to be able to decide when to use a calculator and when not - so that their ability in mental arithmetic was also sustained. Another question for the teachers was whether the children had understood the power of the calculator - with facilities like memory, interpretation of the decimal point in money - and if they had, could they exploit it independently.



HUMAN, SOCIAL AND POLITICAL

Background

Young people need educational opportunities which broaden their minds and assist them in establishing their own attitudes and beliefs. Their courses should bring about understanding of the world beyond the home and the family, knowledge of the past and the present and tolerance of their own and other people's strengths and limitations. Children need the confidence to ask questions in order to make sound decisions.

To study, for example, the question of energy, links are naturally made between school subjects. Where energy is produced requires a historical explanation relating time, discovery and human inventiveness. The process of generating energy has geological, economic and scientific consequences. People working in the energy industry will have a different view of the long term future of their industry from other citizens and from other interest groups, e.g. conservationists. The map of energy production can so easily change. Whilst such issues can be addressed in the classroom, a well-planned industrial visit will have greater impact on students - they will realise that there is much more to the production of energy than just the scientific processes.



HUMAN, SOCIAL AND POLITICAL

A Caribbean Influence

"We were looking at why people move either within a country or from country to country....."

We first looked at our own family to find out if our parents had ever moved, and then we did another survey to see who had made a move in the last five years. I wanted to find out why my mum and dad moved here so I asked them. All of us asked our parents the same questions. Most of the reasons were connected with work, but for John's dad and Anita's mum, it was marriage.

Then we worked together in small groups looking at seven different countries including here. For some of us, the year was 1956. For others it was different dates between then and now. Some of us also had newspaper stories or adverts from newspapers and we all had 'factsheets'.

Our newspaper was "The Daily Gleaner". We had to pretend that we were a family living in Jamaica just over 30 years ago. We had cards which told us what sort of person we were. Our home was small and wooden. It had a verandah but rattled horribly when hurricanes blew. My grandparents were slaves, but whilst we all now have our freedom, dad still works long hours farming for very little money. I'm at school and would like to get a better education, so should we go to Kingston?

There were many other details about our life and many things pulling and pushing us from our village. What should we do? We discussed and decided to move to London."

Context

This example shows relatively young children investigating various historical, geographical, political and social factors which have contributed to the development of present day Caribbean life, and including the Caribbean community in Britain today.

Study which encourages students to reflect on life beyond their local horizons by activities which tax their knowledge of world issues and their attitudes to interdependence, tolerance and cooperation between peoples of different cultures is important. It contributes to their understanding of economic issues which have operated in the past and have helped to shape present world trade patterns.

The children learn through research, discussion, teamwork, confrontation and its resolution, enquiry and decision-making. The teacher encourages them to reach conclusions on the basis of real evidence which they themselves have collected, analysed and evaluated. They also learn that more than one answer may be possible.

Analysis

Children use a variety of skills to interpret and understand the issues surrounding the development of present day Caribbean societies, the movement and migration of communities, whether forced or voluntary, and, of course, the consequent need for people to adapt to their new surroundings and circumstances. This requires them to have a good knowledge of the historical, geographical and economic background and the work achieves a good balance between factual knowledge and empathy.

HUMAN, SOCIAL AND POLITICAL

Duncan

Duncan is, I guess, 8, though I felt it inappropriate to ask. He took me all over the building, into the office and the resources room, all of which were open and accessible. He showed me the range of resources the pupils could use: drawing materials, the props from a play that one group were doing, the clay, the drawers all marked with the types of material they contained. He helped to find the register which another pupil was looking for and enlisted my help. It was clear he felt fully responsible for what was in the school.

He showed me the computer and he picked up another child to help him show me around. Together they took me to the Infant Class in a separate hut and introduced me to the various adults there. We stopped to look at the guinea pigs which had just produced a litter and were surrounded by young children.

He was entirely relaxed, confident, unassuming, cheerful yet serious, during the twenty minutes of our tour.

Context

A visitor to a school is a regular occurrence in this small village school - the vicar, parents, teachers from other schools, inspectors. A large number of adults, not all of them parents, come to help in the school. When there are only three teachers, it is important to ensure that children meet as wide a range of adults as possible, and know how to respond to them courteously and with confidence, from an early age.

Analysis

What happens in school is more than just 'the curriculum'. Social development can be enhanced by giving children responsibility within the school and the opportunity to develop ideas and the language in which to express them. For this reason, in addition to the welcome given to visitors, the school undertakes a large number of trips in which parents nearly always participate, and in which the follow-up work is carefully related both to the curriculum and the social objectives of the school.



HUMAN, SOCIAL AND POLITICAL

Children Tackle an Age - Old Problem

GROWING OLD

*When I grow old I wonder how it will feel?
Some of us will be sent to homes
Some of us will go and live with our daughters.
I've never really thought about what growing old means!*

*When I reach ninety I'm going to run a marathon....
And I'm going to win it ! ! ! !*

*I'll sit in my cottage polishing my medal
And I'll be prouder than them all.*

LYNSEY

THINKING AGAIN !

*When the residents of ——— House came to school, I
found them very amusing.... not that they meant to be, it's
just what they said.*

*Perhaps that's what happens to you when you get older. In
some ways it must be fun to be old, but in other ways, not
quite so funny.*

You can't walk so fast or do the things you used to do.

*At first when I thought about growing old I thought that it
would be just the same as I am now well more or less,
but now I think of growing old in a completely different way.*
LOUISE

Analysis

The first meeting took place at the school where the children were given the whole responsibility of playing hosts to their elderly visitors. The children prepared the room and made it comfortable, brought flowers, made light refreshments and tea. After the initial welcome and tea and a chat, the children showed their guests round the school. Over a two month period, the children visited the Home several times, took photographs, talked to the residents and learned of their schooling, wrote stories, letters and poems, drew portraits and made clay figures.

Context

This primary school set up with the local community services department a project with two aims:

- i to give the children an appreciation of the social history of the early 1900's
- ii to help the children understand about ageing and our reactions to it.



HUMAN, SOCIAL AND POLITICAL

A Victorian Experience

The children arrive at the village school - it is a spring morning in 1896. The girls rearrange their shawls whilst the boys awkwardly adjust their neckerchiefs and snatch off their caps as they enter the building. Immediately, they are handed name tags - each tag bears the name and photograph of a child who attended this school almost a century ago.

Susie is intrigued to find herself to be Ethel Woodward, aged 8, of The Rectory Cottage. Her friend assumes the role of Mary Hazelby, aged 7. During the morning, the children investigate their namesakes using the school log books, the houses in the village in which each person once lived, and even sometimes they can locate their tombstones in the village churchyard.

After a lunch which includes the dreaded cold tea - it's time for lessons in the cold, austere and gloomy schoolroom. Arithmetic and handwriting - Walter Mason blinks away a tear as the teacher reprimands him for blotting his copy book. This is followed by drill in the playground and afterwards a history lesson and an object lesson. There is silence throughout. Suddenly the teacher brings down his cane on the desk in front of him and removes his mortar board.

Context

The Centre provides a 'Victorian Experience' for primary and secondary pupils. There is a comprehensive list of preparatory materials which is sent to schools before a visit. Teachers are encouraged to visit and discuss their school's particular needs beforehand and advice is given in respect of follow up work. The 'living history' resources are the village and its school and its potential is thoroughly exploited.

Analysis

Pupils are able to explore and develop a whole range of skills and attitudes. Through role-play, they are able to understand the experiences of late Victorian children at school. Through analysis of materials and of the village they are able to construct an accurate picture of Victorian life in a rural community and at the same time develop skills of research, judgement and interpretation.

HUMAN, SOCIAL AND POLITICAL

Young Planners Search for a New Town Site

"Newspapers, the TV news, the Council, lots of people tell us that Cambridge is a city under pressure from the need for new housing and business sites. Why? What's so special about Cambridge? Will increased growth spoil our city? Where can we find a good site close to Cambridge which would satisfy most people, including developers and business looking to set up in Cambridge?"

We had three jobs to do: plan what we were going to do as a piece of fieldwork, go out and ask people what they thought, set up an enquiry when we had decided on one or two places for the new town, to look at the pros and cons.

We first thought about and discussed the constraints e.g. flood risk areas, and areas of potential e.g. main roads. I had to use a map to draw on the areas of different potential and constraint and came to a decision independent of everyone else in the class. We then used sticky dots to place our chosen sites on a big map. Eventually, it had twenty-nine dots on it, but two popular sites emerged.

In small groups we set out then to be planners, councillors, developers and members of the general public - finding out the opinions of the proposals. We visited the two villages near the sites to question and test our study.

When we had finished, we set up our enquiry and fourteen interest groups were represented. It was a very good debate and certainly made you think. Our research outside the classroom gave us plenty of information which in the main was only shared when we had to put together our case at the enquiry.

But sometimes, it's hard to swallow decisions that you don't believe in."

Context

Outside experiences have to be well-prepared, whether in terms of the meaning of the task to be explored and the process of information gathering or in assisting the students to analyse data and draw conclusions. The students preparing for GCSE researched and debated issues in land management and competing claims over the use of specific parcels of land.

Another similar group looked at the case for setting up a Country Park and studied the interest and pressure group cases, the arguments about access and the use of local resources.

Students' investigations involved them in newspaper research, questionnaires, interviews and role-play and frequently the outcome would be different from that expected. Alternatively, the outcome could be that no firm conclusion - positive or negative - can be reached!

Analysis

In addition to the technical mastery of issues relating to data collection, sifting and analysis, students will be drawn into the problems of weighing opposing arguments, strongly expressed, and will draw on their own feasibility study - which therefore must be sound - to come to conclusions.

HUMAN, SOCIAL AND POLITICAL

Feeling for Others

Lorna and John are nine year olds in parallel classes in a large new township primary school. Both groups focused on the theme "Anne Frank in the World" - the Anne Frank Exhibition was on in Peterborough at the time - for a term. The teachers' approach to the work was to assist the children to understand both the historical and social circumstances and to comprehend more fully the consequences of prejudice and persecution for the victim.

Context

"Sometimes I look out of the window and see lots of people marching with crying babies in their arms - innocent people walking to a camp of death and only one reason to die - because they are Jewish. But there is nothing I can do to help them."

This piece of Lorna's writing is an extract from her three page imaginative reconstruction based on information she extracted from Anne's diary and the video. 'Dear Kitty'. She has empathised with Anne, exploring her feelings and expressing them thoughtfully. Lorna appreciated the socio-historical context in which Anne and her family lived and the similarities and differences between the sub-culture of her Jewish family and the wider culture of Jews in Holland.

John wrote this letter:

*'Dear Anne,
I feel I know you already. I feel sorry about the two million Jewish people that died, including you. Since I've known about you I have felt sorry for you, but not for the people who persecuted you. But now you are famous for your diary. I hope you don't worry about your diary, it is safe. When I die, I hope I will meet you in heaven.'*

John wrote this letter following a visit to the 'Anne Frank in the world' exhibition at Peterborough Cathedral. He is a child who does not find writing easy, but the issues considered as a result of this experience touched a great vein of sensitivity in him.

Analysis

Lorna comes from a secure, loving family and throughout the topic she has been able to experience to a certain degree, some of Anna's feelings through characterisation in drama activities. John on the other hand felt that his own family was being persecuted. His father is unemployed and his mother and the children have recently moved into a hostel, so he constantly related Anne's story to his own.

Both reactions need very careful and thoughtful handling by the teacher, as do all issues where young people's reactions to and ability to cope with stressful or emotional situations are brought into play.

Thus it is important here, as it is with issues relating to the spiritual, moral and ethical development of young people, that teachers actively identify aspects of their subject work which may play a significant part in exploring any pupil's personal values and attitudes.

Peterborough Anne Frank Exhibition Steering Group
(non-profit-making)

ANNE FRANK
IN
Peterborough:
June 1988

SPIRITUAL, MORAL AND ETHICAL

Background

Spiritual

The term 'Spiritual' is used in a variety of ways in different contexts. Within education, a broad definition of the word is adopted which embraces such aspects of non-materialist values, of aesthetics and of the significance of human life and of the world. It is therefore clear that while RE has a significant contribution to make, it is by no means the only element in the curriculum which can contribute to this area of experience.

Moral and ethical

"It cannot be the aim of a state school in a pluralist society that all its pupils necessarily become religious, but it should be its aim that all pupils become moral."

*(Charles Bailey - PSE in Secondary Schools
(Longman 1983))*

Moral education is concerned with helping pupils become aware of moral values and to respect religious and moral values even when they do not share them, as well as to have the confidence themselves to make and stand by moral judgments.

The school community will have an important influence on this area of pupils' development for which it shares a responsibility with society at large. While moral development can and should be aided by the pupils' experience of all areas of the curriculum, it is the ethos of the establishment and the quality of relationships within it which will be the most powerful influence.



SPIRITUAL, MORAL AND ETHICAL

Jane is Coming

"The news that Jane was coming tomorrow was greeted with enthusiasm by the group of five and six year olds. The new intake of children had not met her before, so I was interested to hear the comments made by the group. They were very conscious of her physical disabilities and eager to explain to the younger children the responsibilities they would have to accept when Jane was there."

"You'll have to pull your chairs in, because she might fall over."

"When she falls over, she can't get up easily."

Perhaps the most thoughtful comment was made by a child aged just five.

"It takes her longer to think."

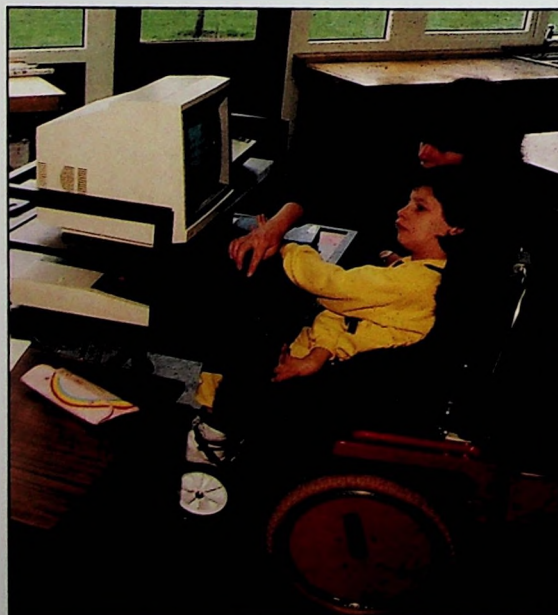
There were several affirmative nods. This was something I had not discussed with the children because they were so young, but they seemed to show a mature understanding of Jane. They were very patient with her, waiting a long time while she answered questions, for instance. They are not always as tolerant of each other!

Context

Jane is severely mentally and physically handicapped. She attends a special school in Cambridge and it was felt that she would benefit from contact with the children who live near her, so for one morning a week she attends the local primary school. Jane is accompanied by an adult assistant who helps her with her specific needs and at the same time is a valuable extra adult resource for the rest of the class.

Analysis

"We in the school feel that the benefits so far have been mutual. By observing and playing with Jane, the children are developing an awareness of the needs of a handicapped person and of their responsibilities."



SPIRITUAL, MORAL AND ETHICAL

New Life

Each infant class in this Roman Catholic Primary School planted and monitored the growth of a lily bulb as part of their Lenten project and preparation for Easter. The symbolism of new life was introduced and discussed as the children looked at the growth of the plants. The work culminated in a final Easter celebration in which each class shared their work with the others. Parents were invited to help with the preparation for the celebrations. A Muslim mother brought her baby who was another example of new life.



Analysis

The children were beginning to acquire knowledge of some of the symbolism associated with the Christian festival of Easter in a way which was appropriate to their age and stage of development. They experienced the excitement of preparing and taking part in celebration. The work leading up to the celebration had offered plenty of opportunities for them to experience the wonder and beauty of the natural world and to ask questions about it, to some of which they could find answers and others not. The children had worked cooperatively on many aspects of the topic and so had shared happiness when things went well, and disappointment when, for example, some of the plants they were looking after failed to thrive. The parallel was drawn between human and plant growth - like plants, humans grow and develop at different rates. We are all unique. Like plants, humans need care, attention and love.

Although the topic was mainly concerned with helping the children to understand what Easter means to Christians, it also offered valuable opportunities for maths, science and art work.

SPIRITUAL, MORAL AND ETHICAL

What Do We Expect?

"I was surprised at his ideas. They seemed very sensible."

Context

This comment was made by an able boy on a disruptive pupil's contribution to discussion on arguments for and against the existence of God. It was made during lesson three of a six week RE module which was part of a programme in personal development. This took place near the beginning of the fourth year when pupils are taught in mixed ability groups, having been taught in ability sets in the second and third years. There is a tendency for suspicion to exist between different groups of pupils in the class - fear of exposure amongst the more thoughtful, but also certain low expectations of some pupils with a 'reputation'.

Analysis

The content of this course is intended to make pupils question, learn to develop an argument and explore analogy. Perhaps moral development (or lack of it) in this kind of course has more to do with classroom organisation than with content. It is important that there should be an atmosphere in which each person's contributions are respected and that the discussion has real substance and is well controlled.

The structure of the overall course and pupils' expectations of it are also factors which influence the effectiveness of the course at least as much as course content.



SPIRITUAL, MORAL AND ETHICAL

The Indian Dancer

*The lamp burns
She appears as if from behind a curtain
So pure as if bathed in milk and honey
With the smell of imaginary incense.
The sign of the blessing shines,
Her eyes begin to move
Like a chronometer worshipping in time
The sound so dominating no mind can
Escape it.
The robes of gold,
No eyes can turn away.
Darshan of Shiva in her face,
As the lamp burns
With grace and peace dharma is told
And with eyes as powerful as those of Lord
Shiva himself,
So much is understood.*

Context

This poem was written by a non-Hindu pupil as a GCSE Coursework assignment. An Indian dancer of the Bharat Natyam school gave a lecture-demonstration to fifth year pupils, who were then asked to explore the value of dance as an expression of faith. This pupil chose to write a poem which expresses both the dancer's response to God and her own response to the dancer. It draws in a sophisticated way on previous work on puja (Hindu worship).

Analysis

This poem seems to show understanding of a type of Hindu spirituality which may in turn contribute to the pupil's own spiritual development. It demonstrates considerable understanding of non-verbal communication through dance/ritual. In the conclusion to her coursework, the pupil showed her respect for another's traditions, as well as an awareness of the variety of responses, positive and negative, which such dance may evoke.

THE PHYSICAL

Background

The young of all mammals learn the basic skills of their kind through play. Exploration of natural features, of spatial relationships, social interaction and their own body resources lays the groundwork for transition to adult life. People are no different; they are simply more inventive, more social and more extensive in their repertoire of play-learning, due to their greater intellectual powers. Learning about physical activities and through them, in the more formalised setting of the school, is an adaptation and continuation of the motivating, stimulating experience of early childhood.

The physical and outdoor curriculum of many schools provides activities which will help children to become more dextrous, stronger and more flexible and to have an understanding of health and fitness. A variety of challenging aesthetic and competitive opportunities, requiring cooperation and appreciation, making demands on physical and mental resources, is essential if the physical experience is to contribute fully to the aims of education.

The curriculum, particularly at secondary level, is heavily intellectually biased. Most study, however, does require the development of fine manipulative skills. Essential though those these are, they have little effect on the body's basic need for exercise.

Medical opinion is increasingly united on the value of physical exercise for everyone. Of recent times, we have sacrificed our physical and physiological well-being to the motor car, the armchair, the office desk and fast food. It is vital that children and the community receive and enjoy varied programmes designed to teach skills and foster healthy attitudes to diet and exercise.

Such foundations, soundly laid at an early age, will enable the individual to retain an active, purposeful approach to health and fitness.



"An important feature of the lesson was the teaching style adopted. There was good use of voice, an appropriate amount of instruction and an awareness of what all the children were doing. The teacher moved between groups easily and praise and help were forthcoming".

Context

Seven and eight year olds were taking part in one of their two weekly gymnastic lessons. The Head explained, "Our aim is to give children a wide variety of rich experiences in all areas of the curriculum. This applies to physical education where all children will take part in gymnastics, dance, drama, swimming and country dancing during their six or seven years here."

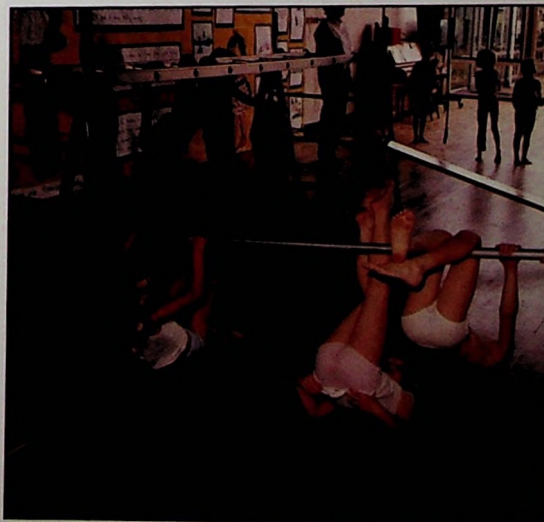
The richness of these experiences depends entirely on the teacher's skill and imagination. Course attendance and shared expertise are features of this school, where there is no P.E. specialist, but where there is a tradition of high expectations.

There are many extra-curricular activities and support from parents as coaches, fund-raisers, drivers and vociferous supporters.

Analysis

Competence in coping with apparatus, cooperation and effort were all demonstrated in this lesson. Children were learning about orientation in space, managing their bodies in extraordinary places, gaining strength and flexibility and growing from their knowledge that they were doing something well.

For children, work and play are indistinguishable when learning is fun. A 'good' teacher provides the environment, resources, information and encouragement. Praise is the final ingredient which confirms the child's instinctive belief that he is 'good at that'.



THE PHYSICAL

Variety is the Spice for a Fitter Life!

Mark and Sarah, pupils at a large comprehensive school are offered a wide range of activities in the first three years. They continue to work together, as they did in their primary school, in gymnastics, dance, indoor racket sports and fitness activities, refining and testing techniques and reaching higher levels of skilfulness. Sarah has traditional sports, hockey and netball, on her timetable, whilst Mark improves his knowledge and skill in football and finds rugby a little frightening. Both are able to attend clubs of their choice outside the normal school day. Sarah's class won the inter-form hockey competition and represented the school at the district tournament.

Context

The physical education department attempts to meet the needs of all the pupils by offering a variety of experiences. A carefully planned programme is designed to draw out the strengths and potential, however slight, of each person.

Pupils remain with the same teacher for all lessons throughout the year, a system which makes great demands on cooperation and the sharing of expertise among teachers, but which provides for pupils a secure foundation for learning.

An assessment is made at the end of each section of work and a final, annual report comments on skill, attitude, personal fitness and social development. Pupils as well as teachers contribute to this analysis of progress and aptitude.

Analysis

Individual needs are considered and provision made for them. For some, the refinement of motor skills will open opportunities to them, both in sport and at work; some will learn to appreciate strengths and limitations in themselves and others; they will learn about rules, codes of conduct and ethics in practice.

Effective means of recording individual progress and monitoring the effects of changes in content and delivery are essential criteria for student success and development.



"The TVEI residential course"

So said an applicant for a deputy head teacher post, when asked for an example of an educational experience he would wish to bring with him from his present school.



Context

Shrieks accompany the discovery of early morning dew by children from the town, as they emerge for breakfast at the start of their first busy, tiring, energetic day. During the next few days they will make discoveries through first-hand, practical experience, about themselves with other people, and of the natural environment.

Four days away from home with their class have been offered to the two hundred and twenty fourth year students on the County's Technical and Vocational Educational Initiative - TVEI. All are expected to attend and, in practice, more than 90% do so.

"You are required to establish whether 1000 cubic metres of water can be taken from the river daily without reducing its flow by more than 25%".

This is one of several tasks they will attempt during the four days, and this mixed group of five students discuss their resources and work out on paper and using models how this might be achieved. Lifejackets donned, the canoe is launched, measuring ropes, plumb lines set up and a range of measurements taken and recorded. An orange is discovered to have an almost neutral buoyancy and being unaffected by wind is an excellent object with which to measure the water flow.

Results are plotted, diagrams drawn and calculations made.

Group and tutor withdraw to the marquee for a well-earned drink and a de-briefing on the day's events.

"How could we have improved it?"

"Did we need so many measurements?"

"What parts did we all play?"

These questions arise naturally and are discussed unselfconsciously. Such daily sessions culminate in an end of stay appraisal as a contribution to each student's record of achievement.

Analysis

Residential experience offers pupils and staff the opportunity for protracted application to themes and tasks, unconstrained by the traditional school day. The student is able to pursue study in depth, develop relationships and learn new skills.

Problem solving, teamwork and imaginative application to tasks are the essence of this work-related opportunity in outdoor education. Planning, doing, reviewing will be crucial life skills for these students.



THE SCIENTIFIC AND TECHNOLOGICAL

Background

The growth in importance of science and technology at school exactly parallels the development of those aspects of our lives. However, to reflect faithfully all those areas in the years beyond the 1980's and 1990's, the very broadest interpretation of science and technology is required.

Hence, not just the traditional subjects, physics, chemistry and biology, metal or woodwork, nor even Computer Studies, but advanced scientific and technological skills, which can be taught in the laboratory and the home economics room, in the workshop and graphics studio, and at a computerised work station, all find a place in the National Curriculum, and are well-established in Cambridgeshire schools.



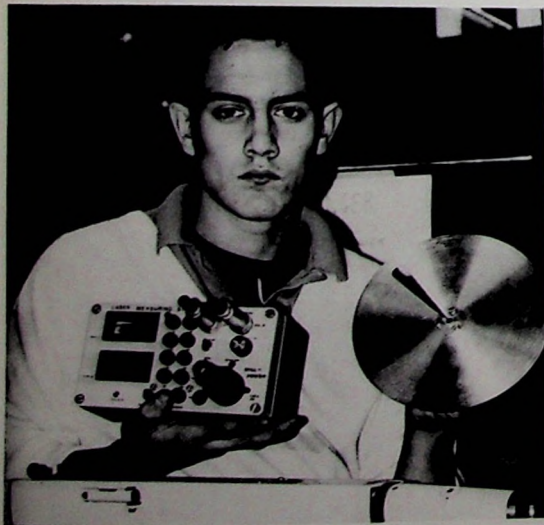
THE SCIENTIFIC AND TECHNOLOGICAL

"A" Level Technology - Industry Benefits from Students' Work!

How much more exciting a project could there be than a commission to work on a key piece of Channel Tunnel technology - and get your 'A' level along the way.

William designed a laser guidance system for use with a tunnel boring machine currently being used on the drainage of the new London Docklands and eventually on the Channel Tunnel. Others in his "A" level group in this Cambridgeshire school worked on projects as various as a fruit grading machine for Fenslands fruit farmers, specialised equipment for use by severely disabled and wheelchair bound students, physical fitness equipment and a personal-ised design studio.

William's project was carried out with one of the UK's largest building and civil engineering contractors.



Context

Tunnel construction is normally carried out by excavating the ground with machines and lining the walls with precast units which bolt together behind the machine as it moves forward.

It is essential that an efficient and accurate method of aligning the tunnel is used. One technique is to use a laser beam for steering the tunnel.

Normally this thin pencil of light is projected along the roof of the tunnel from a datum point on to a target in the machine. If the beam is not hitting the centre of the target, the operator needs to make the required correction. Vertical alignment must be $\pm 25\text{mm}$ and $\pm 75\text{mm}$ horizontally.

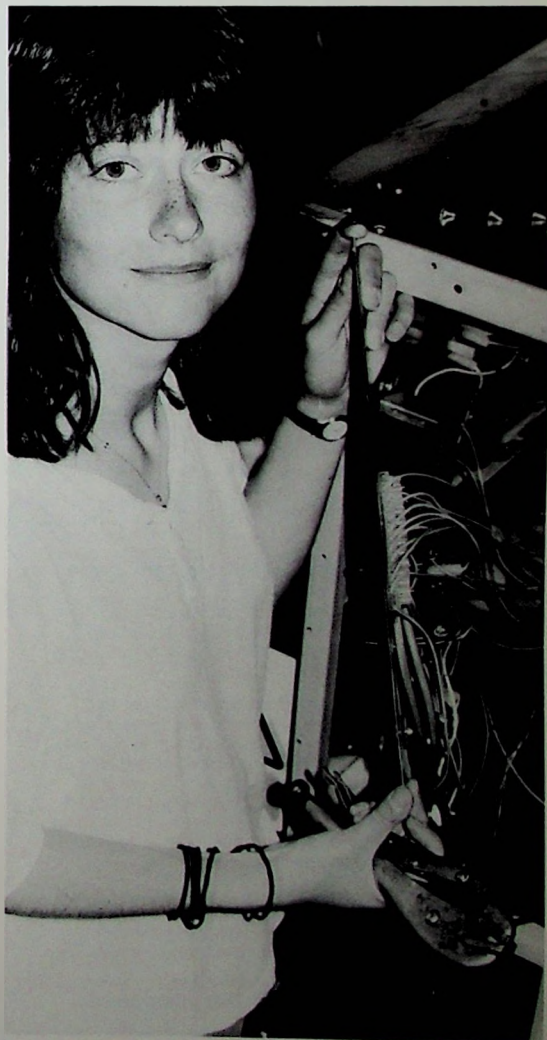
The problem was identified by the company as the need to design a light-sensitive system which would receive the laser beam giving a digital read out of the tunnel machine's deviation from its correct position.

An additional specification was also given to the student to design within this sensing device a system for giving a reading of the attitude of the tunnel machine, i.e. 'overhang' or 'look up'; whether it is heading right or left or relative to the laser line, whether it has rolled right or left to compensate for the movement of the target.

Analysis

The design problem fulfilled the requirements of the project element of the 'A'level Technology course and the device which was designed and made was evaluated on the tunnelling machine by the company and the student. It used knowledge of electronics gained during the course; it applied concepts of science and involved the use of higher level maths together with skills of graphical communication, demonstrating the multi-disciplinary nature of technology.

Additionally, it capitalised on an effective relationship with industry which had been established by the school. Many of the expensive components including the spectre-physics Lt4 laser were provided by the company. The company allowed the student access to the machine in its working environment and provided all the technical specifications necessary for the problem to be solved.



THE SCIENTIFIC AND TECHNOLOGICAL

Calculator Styling

This project - Calculator styling - was set for a group of second year secondary school pupils to give them an introduction to product analysis and design.

Pupils were asked to examine the functions of calculators; what is already on the market? what kinds of display are available? how are calculators powered?

They were then asked to propose a number of different designs for calculators based on specific use, select an optimum solution and model it to a professional finish.

Finally, the project involved designing a display and package for the calculator on the basis that it had to be marketable and attract high sales in a competitive 'marketplace'.

Context

Pupils were required to investigate a variety of calculators on the market and analyse a number against ergonomic principles, kinaesthetic feedback, fitness for purpose and marketability.

Graphic techniques were developed in order to present the layout of the keypad in two dimensions. Texturing and colouring using different media were experimented with by pupils before selecting a final design which was then modelled. A considerable amount of interaction took place between pupils as they commented on each other's ideas. The teacher acted as a guide and learning resource in addition to using class-based teaching techniques.

Modelling in card, styrofoam and vacuum formed sheet brought a realistic dimension to the project and stimulated use of some very innovative ideas for representing the keypad arrangements and display.

Display packaging using dry letter transfer techniques and spray methods made a considerable impact.

Analysis

The project developed a range of graphic and modelling skills in a design and make context. The importance of choosing an idea which was attractive to both girls and boys and within their experience and sphere of interest was significant and quite conscious.

Freedom to design within relevant design criteria and allowing scope for all levels of ability were also important considerations. At the end of the project, pupils were asked to evaluate the success of each other's designs on the basis of attractiveness and function.



THE SCIENTIFIC AND TECHNOLOGICAL

More than Victoria Sponges.....

The students were Lower 6th Form 'A' level students, following a Home Economics (Food) syllabus. Throughout their lesson they showed themselves to be mature, well-motivated, skilled and professional learners, stimulated by the task in progress and committed to their work. They were engaged in investigations based on an extremely wide range of pulses and were being required to demonstrate problem-solving, investigation, individual and group skills. They showed themselves to be lively, articulate and well able to evaluate their own work and draw informed, reasoned conclusions from it. The students also obviously enjoyed what they were doing.

Context

Everything around the students was conducive to efficient learning and excellence. All equipment was well organised, the resources were clearly labelled for ease of access and use. Wall displays abounded which were attractive, topical and fresh. A separate resource area had been created and this had been the subject of considerable research, thought and planning by their teacher, who is the Head of Department.

The resources were varied and attractively presented, inviting exploration. The lesson progressed in planned stages - the preparatory work was undertaken as a group, followed by individual practical work and culminated in a group evaluation of outcomes.

Analysis

The care and thought which had gone into the work was evident. The students' confidence and enthusiasm was not incidental - it had been fostered and nurtured. The professionalism of the teacher and the environment she had created communicated itself to the students and was reflected in their attitudes and approaches to the task. Her calm and confidence conveyed an atmosphere of trust and shared exploration and her skilful support and positive encouragement of a less able student was also evident.

Positive professional style and a stimulating environment in which to work accompanied a task which had been planned to stretch the full range of abilities such a group contains. The students' ability to evaluate and discuss their work critically was the finest tribute to the quality of the learning they were being offered.

THE SCIENTIFIC AND TECHNOLOGICAL

Trains and Boats and Planes.....

Robert, aged 6, was producing a machine from technical Lego that consisted of two interlocking cogs, connected to an electric motor by an elastic band drive belt. He had written a simple computer program in a high level language to switch his machine on for 5 seconds and then off for a further 5 seconds. Robert's friend, Hannah, aged 7, was producing a more sophisticated vehicle with 2 electric motors. The first motor was connected through a rubber band or drive belt to 2 'fans' on the front, whilst the second was connected through a pair of gears to drive the wheels. She had already generated a program to control the fans and was intending to modify it to control the vehicles as well.

Context

The group of 22 infant pupils in this small village school had been asked by their teacher to construct from Lego vehicles of many descriptions. As an alternative, they were invited to produce machines intended to manufacture imaginary artefacts such as rubbers and teddy bears. All machines produced by the children were to be capable of movement and this movement was to be controlled using a BBC micro-computer with a software control package.

Analysis

The children were able to use their imagination to design a vehicle or machine of their own. They were truly 'in control'. In using their previous experience of working with Lego and the class microcomputer, these children were able to solve a problem that became their own.

As they embarked upon this task they were able to challenge their own manipulative skills as well as exploring concepts of movement and electrical circuits. At the same time, they were engaged in evaluating their models, and improving them in order to overcome faults such as excessive friction, problems with gearing, or difficulties with the tension of drive belts.

As a result of this activity, they were becoming comfortable in using their knowledge of scientific concepts and using problem-solving skills in a technological context. They were also becoming aware of the use of a computer to control and influence their environment.

The children were motivated by the excitement of these activities which were given relevance by their place in an overall topic on movement.



THE SCIENTIFIC AND TECHNOLOGICAL

A Real Launchpad!

When the whole of a school - albeit only 80 pupils or fewer - are studying the theme of movement, great possibilities for finding tasks suitable to their different ages, stages of development and ability occur.

The reception class were looking, during P.E. lessons, at how their bodies moved. In the middle school, pupils were working on many aspects of movement through a study of leaves and clock parts to flight and floating. The upper school pupils were solving problems using pulleys, rollers, wheels and cogs.

Context

The children had all recently visited the Science Museum in London where they had the opportunity to spend two or three hours in LAUNCHPAD, an outstanding exhibition, now to be permanent, which gives children first hand experience of all sorts of moving, moveable, exhibits and machines, complete with the sorts of scaled up experiments it would be very difficult to develop in schools.

Back at school, the visit stimulated the pupils to try out their own ideas with construction kits and other materials, although developing such items as wind tunnels were beyond the scope of this school.

Analysis

Children's learning needs were accommodated by beginning with the younger children's experiences of their own bodies and progressing to more abstract ideas with the older children. They were working in mixed ability groups and were supported in their learning by reference books, equipment, other children and teachers.

The children were highly motivated in their work and this positive attitude was encouraged by the evident care given to the way that the children's work was displayed in the classroom and elsewhere in the school.

THE SCIENTIFIC AND TECHNOLOGICAL

Rained Off!

Nigel is looking thoughtfully at some limestone chippings on the laboratory bench in front of him. Avril is smashing a pile of similar chippings into a powder using a large hammer.

Near the pile of chippings is an electronic balance connected to a microcomputer.

At last Nigel speaks and suggests that there will be little difference between how fast the powder or chippings react with the dilute acid and he starts to find out by testing his hypothesis experimentally.

Janice reminds him to make sure that he compares equal masses of both chippings - he agrees and they begin to set up the tests.

Their teacher points out that they should add the marble chippings to the acid on the balance so that the computer records the beginning of the chemical reaction and not just the end.

A few minutes later Nigel is once more deep in thought; having seen the reactions he has to come up with another hypothesis. Avril advises him to wait until they have repeated the experiment - just in case.

Context

These pupils have been investigating the effects of acid rain on the stonework of their local cathedral where severe crumbling of the stone can be seen.

This work forms part of their GCSE science dual award course and they are looking at the environmental impact of acid rain.

Practical work is an integral part of all their science work and the pupils are encouraged to design their own investigations with appropriate help and guidance from their teacher.

A large bank of apparatus and written resources is available to the pupils and skilled technicians are required to distribute and service these resources. Well resourced science laboratories are required by the pupils for their science lessons.

Analysis

Science studies in schools have become increasingly concerned with pupils carrying out their own experiments rather than observing demonstrations by the teacher.

The science courses themselves have become more integrated i.e. elements of Physics, Chemistry, Biology and the Earth Sciences become part of all pupils' scientific experience. This integration provides greater opportunity for the study of topics such as pollution and astronomy as well as study of traditional scientific areas.

THE SCIENTIFIC AND TECHNOLOGICAL

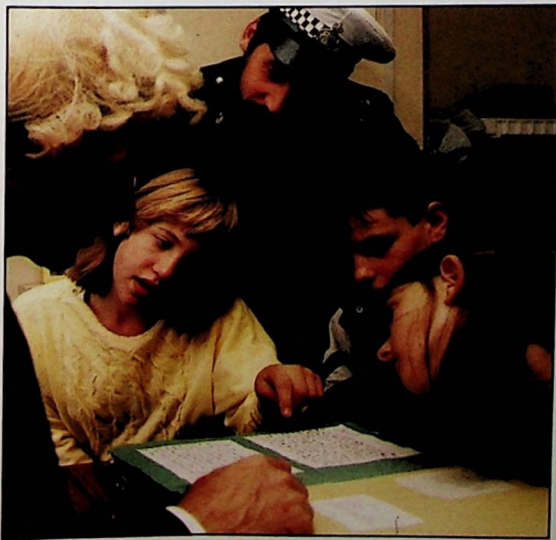
Learning by Pretending....

What does a ten year old have in common with the local Bobby?

In this school, they have found the answer to this conundrum - both can use a computer to solve problems!

A Police Program was set up; the classroom became the police station with the children as the police force. The simulations were developed using the computer which set up situations for the children to evaluate and use as in a real police station.

They also had to make tapes of lessons and set up a telephone link between the children. Another exercise would later involve the children in using a Flight Simulator Program based on flying an aircraft anywhere in the world.



Context

The idea was that by using simulations the children could be stimulated to develop skills which they could then use over the whole curriculum. The simulations were very well done and the applications were wide and far removed from the computer and the classroom. The police program, for example, has a telephone link to the classroom to allow the children to contact other people in the class. Tape recordings of interviews had been made by visitors invited to the school for this purpose to explain what they did. These included Policemen and Solicitors. The children used the interviews and found out information they could add to their reports. Children also visited work places to find out about the services offered.

For the Flight Simulator Program, an aircraft simulator was set up in the classroom with a cabin built like a deck. The computer was their flight control. The class had to work out routes to their chosen destinations and thereby use mathematical skills such as timings and coordinates, as well as the geographical skills of map reading. Destinations agreed, they then had to find their way around, learning how to take off and land their aircraft. They had to manage their petrol store as these trips had to be timed, accurate and good value. They too had outside data, especially from local RAF stations where they were taken up in an aircraft.

Analysis

The classroom work was dedicated for a whole term to solving the problems which these simulations presented - very much real life. It was a way of working that needed the staff of this small school to coordinate their work and think about exciting and testing ways of learning. Such a programme could be followed in any school.

THE SCIENTIFIC AND TECHNOLOGICAL

Big Trak Shows the Way!

There is a bewildering array of small equipment now available on the educational and toy market which develops children's ability to think logically. In the example which follows, six year old pupils work in maths using LOGO - a mathematical programming language - with Big Trak. This computer toy, which looks for all the world like the latest NASA technology, allows children to decide its directions and angles of movement by giving it instructions - it is fun, but teaches them basic mathematical skills.

They then progress onto the Turtle, a friendly robot whose casing resembles an electronic hedgehog without the prickles. It too is controlled by the child's instructions, in this case to teach more complex mathematics, including geometry. Dart Program follows logically when these skills have been mastered, but unlike LOGO and TURTLE, it is two dimensional, so creating a bridge between practical work and the theory towards which the children are progressing.

All of this work also helps to develop children's ability to use language in a mathematical context and in the earliest stages, the teaching of alphabet, words, sentences, vocabulary and free writing.

Context

Big Trak can be used in novel ways e.g. to make the layout of a village around whose obstacles the vehicle moves. Such a village needs roads with traffic signs, crossings, parked cars, delivery vans and so on - learning the fun way. Turtle is similarly used in a very free way, with the children having to reach their own conclusions about controlling it. 'Dart' is used to get more precise and detailed knowledge than Turtle.

The children are then ready to move into word processing with the first flush of new ideas on screen, which they then edit later, so their work is no longer roughed out and 'copied in best'. This enables free writing straight onto the computer using the skills learnt.

Analysis

Teachers find this way of working is beneficial for the children - the whole approach for infants has had to be analysed. It is easy to see the gains when you watch children working, frequently in groups and see their expertise, motivation and newly developed skills.

THE SCIENTIFIC AND TECHNOLOGICAL

The World of Hi-Tec Comes into Secondary Schools

The school uses computer assisted learning across the curriculum for collaborative projects involving databases and wordprocessing; the National Education Resource Information Service (NERIS) and the provision of up to date information; satellite links up to a Meteosat and a fibre optic link from the environmental area on the school field into the classroom; it is also a member of the DTI pilot scheme for the use of interactive video.

Context

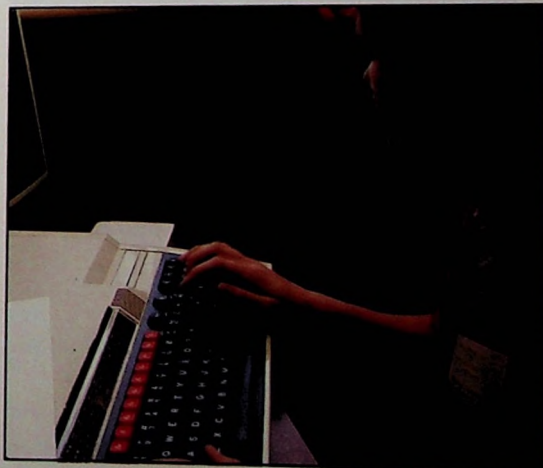
The largest impact on the children has been through the introduction of collaborative learning. Two projects involve at least seven subjects. This encouraged teachers to make good use of the technology, reviewing their own teaching methods and stimulating better use of IT within their classrooms as well as discovering the benefits of straying from the confines of their own subject. NERIS was effectively used to find the data for inclusion in high quality individual worksheets to suit pupils' own projects.

Another development which has been supported by the DTI is that of INTERACTIVE VIDEO, where the student can work with and on linked computer and video materials to interrogate the data available. Although still in pilot stage, this allows teachers and children to put together data in the form of a visual worksheet with both the still and moving images. The technology therefore already exists for students to present GCSE projects on disc in a home made interactive video. Who knows where this may lead in terms of distance learning in the future?

Analysis

The role of the IT teacher is to advise and assist other subject teachers within the school as to the best way to use IT. Each subject teacher identifies where in his or her courses, the computer can best help the student's learning. Then it is up to the teacher of IT to find strategies using the software available - and in some cases, creating new software - to help the subject teacher to help each student.

The use of the computer to record weather information, as seen on television, also adds to the curiosity element for individual pupils as well as being a valid and useful resource.



THE SCIENTIFIC AND TECHNOLOGICAL

*Extra, Extra,
Read All About It!*

The "Times" set up and advertised a national competition for schools to produce a newspaper in one school working day taking advantage of the facilities offered by electronic mail.

All over the country, schools subscribing to the electronic mail system received real stories. Using these sources, local and other news, each school spent the allotted day making its newspaper.

Here the computer brought together in one Cambridgeshire school 30 of its pupils of different ages and abilities who were able to role-play and to contact in their roles people from all over the country. Working with reporters from local newspapers, some typed out local stories they had already researched, others re-wrote stories that came through on electronic mail. Older students became sub-editors, checking or revising stories. Another group printed headlines and worked on layout.

Context

Electronic mail has been used as part of a communication project linking Cambridgeshire schools with students in America, Australia and nearer at home with local schools working on collaborative writing projects. Word processing is widely used by students in the school and there is considerable interest in newspaper work. Students have visited the local newspaper, produced their own pages for it and produced a termly community magazine.

Analysis

Although more sophisticated pagemaking software is available, it was rejected in favour of straight forward word processing and cut and paste, in order to achieve the maximum involvement of all pupils instead of relying on a small number to mastermind the newspaper.

A very wide range of communication skills are demanded and developed by such an exercise: telephoning, interviewing, drafting, editing, summarising, talking, giving instructions, persuading, note taking, headline writing, drawing graphics, word processing . . . all skills which employers locally are very keen to see in their young recruits.

In addition, electronic mail and wordprocessors are being used in an authentic way. Students work collaboratively and are released from their usual timetable to work with several teachers who bring their combined expertise to develop the students' skills for employment. The team was joined by a member of staff from the local newspaper and used its archive collection to research stories, and took film to its reprographic department for processing.



PREPARATION FOR ADULT LIFE AND WORK

Background

Whilst it is true that all the approaches to the curriculum are a preparation for adult life, some learning is very deliberately focused in all schools to relate to the world of work.

With younger pupils this is just one strand in a complex pattern of learning. As the students mature and develop, vocational training is more prominent but still augmented with a range of support.

Progression through the phases

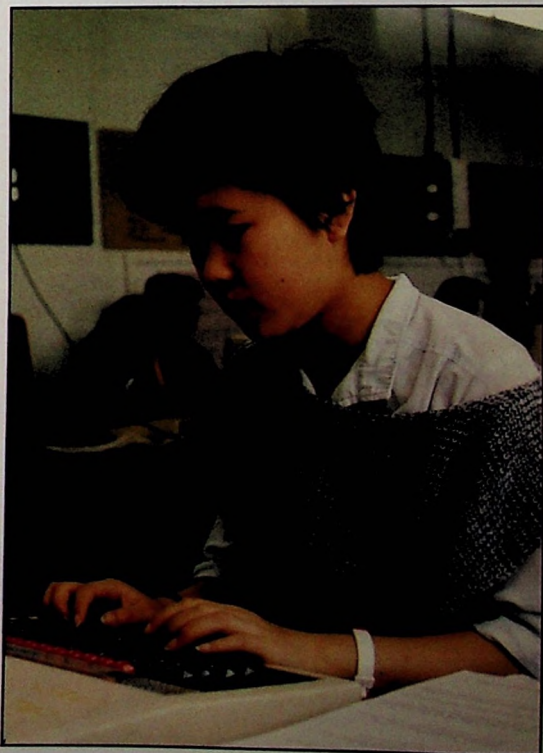
In general the trend is for work related activities to become more overt as students move up through their schooling. Thus in the reception class of a primary school, dressing up and story telling provide some of the threads through which the world of work is introduced. By the middle years of secondary schooling, the balance between education and training is changing to concentrate more seriously on the idea of future careers and the skills and qualifications needed to undertake them. Post 16, as one college Principal put it:

"The curriculum itself has been developed to include liberal general education components and to have whenever possible real life experiences such as work placements and college projects commissioned by companies leading to real commercial marketing."

The process is cyclical. The teacher in charge of a reception class summed it up:

"Of course it goes full circle. We've got a dressing up corner over there and the children role-play lots of different jobs and real life situations. And when they leave school, they might well go into one of those situations. All of what happens in between should help them turn role play into reality."

The aims of vocational preparation are to provide individuals with equal opportunities to cope with change, through progression, role awareness, negotiation and personal development. The work should be relevant, yet flexible and stress competence. The task is formidable.



PREPARATION FOR ADULT LIFE AND WORK

The Birthday Party

"How much are strawberries in your time?"

All the shops have got much the same things in them. The six year old is still slightly confused. She knows the shops look different. The shopkeepers - nine year olds in costume - help the illusion. But why are the prices different?

At last the teacher interjects with some thought-provoking questions and light dawns. These are the same shops, at different times, over the last 50 years.

"The price gets bigger as the year gets bigger."

In the class next door, only half the class are present. The rest are visiting a local workplace.

The workshop is full of interesting and unfamiliar smells - sawn wood, plastics and hot metal. The man is deftly putting the finishing touches to the presentation fiftieth birthday plaque which will hang in pride of place in the school. He is obviously a bit nervous, as he does not usually have a sea of curious young faces watching him at work. Amidst the noise of the workshop, he explains his work to the children - they are spellbound.

Back in school, the teacher and the children collaborate in compiling a list of all the different jobs that are needed in this company. They realise the size of the workforce and the need for them to have a variety of skills.

Meanwhile, management theory is being put into practice as a 'mini-enterprise' is in operation. A ten year old girl is obviously the manager. She has her company - Badgerama - hard at work. They are so organised that each person knows his or her role - designing, cutting, stencilling, sticking, assembling, packing, labelling and quality control. They change jobs hourly and each worker is paid the same - one Smartie an hour! The finished badges are bright and effective so they should sell well.

Context

These are pupils from a village community primary school. Their school has been involved in a whole-school theme, "The last fifty years", which is leading up to the celebration of the school's fiftieth birthday. Children have worked on themes such as families and homes, the village and its shops, nearby towns, transport and fashion. All these themes have been investigated in relation to what was happening 50 years ago and the changes which have taken place since.

Analysis

The opportunity was taken to introduce and make real many of the concepts, skills and attitudes with which primary education is concerned - communication, teamwork, leadership, problem-solving, accountability, life skills in the broadest sense. The use of a local company to illustrate the relevance of their work to the children made the whole theme come to life.

PREPARATION FOR ADULT LIFE AND WORK

Business Information Studies for 14 - 16 Year Olds

This course aims to develop awareness and understanding of the environment within which business activity takes place and of the way in which innovation and change take place in that environment and influence business behaviour.

The themes of Business and Information Studies are integrated in the course but assessed separately, so that students obtain two GCSE certificates.

Context

"I had been dissatisfied with the examination courses available but there seemed to be nothing better. It was therefore quite a challenge to be one of the TVEI schools five years ago now and to be involved in the new initiative."

So says the teacher of Business Information Studies at a Cambridgeshire school selected to be part of the Technical and Vocational Education Initiative which the Manpower Services Commission introduced in 1983/4.

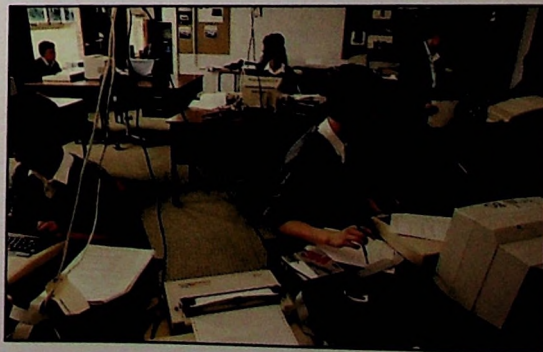
Emphasis is put on the learning which revolves around the student, rather than the teacher. Students are encouraged to develop research skills to complete a range of assignments. These are carefully designed to cover the learning objectives for the course. The students work in an atmosphere far removed from the traditional desk bound classroom.

Analysis

"Very early on we learnt several valuable lessons - that students learn better at their own pace, that they enjoy teaching and learning from one another, that in the new technology age a student is often more adept than the teacher and it serves no useful purpose within the classroom to believe otherwise."

In the new course, record keeping proved a nightmare and is still something we keep changing. But the atmosphere in the classroom is harmonious; students treat the classroom out of lesson time as a place where they can read up work, use the computers or electronic typewriters to make up work or to extend their studies as far as they wish and are able to go.

A weak student in a group will often be encouraged to come in at lunchtime in order to be helped with a particular programme by the teacher or by another member of the group.



PREPARATION FOR ADULT LIFE AND WORK

Careers, Work Experience and Industrial Liaison 13 -16

A work experience scheme is firmly established in the school and all pupils in their fourth year are expected to participate for two weeks in June. The Careers teacher organises the scheme in close liaison with the Area Careers Officer and the School Careers Officer.

Pupils are asked to give three choices of placements and types of work they would like to experience. Each firm and each group of pupils has a supervisor from the school staff who makes contact with the firm and the pupils on two occasions during the work experience period - a key factor.

Pupils do not get paid for the work they do, but evidence is clear of enhanced social maturity and self-confidence. The placement is prepared for and followed up in school and is designed as a package to ease the transition from school to work as well as contributing to the pupil's awareness of the world of work.

In this school, the period of placement is also followed with an "Employers' Evening" when parents and employers are invited and much appreciation is shown to those who have contributed to the programme. Teachers spend a period work-shadowing an employer and observing projects so that they too are fully briefed for the follow-up.

Analysis

Liaison with employers ensures that students are not used merely as free labour, but are given an insight into many aspects of the organisation. The student's work-based assignments, teacher visits and employer reports stimulate specific enquiries which are followed up on return to school via group work and individual Records of Achievement.

Particular care is taken by staff to match work placements to students' aspirations, aptitudes and abilities and to support youngsters with special learning needs to realise the level of commitment and competence needed to achieve goals.



PREPARATION FOR ADULT LIFE AND WORK

The Technical and Vocational Initiative - TVEI

This initiative, funded by the Training Commission - formerly MSC - has been around since 1984 in four Cambridgeshire schools and one FE College, where it covers the education of students from 14 to 19 years of age. It extends gradually from September 1988 to include all of Cambridgeshire's education for this age group.

Students in the 'pilot' report on their work in glowing terms. In a recent student survey, they answered thus;

Question:

How do you feel now about the TVEI subjects you chose?

Generally satisfied **82%**

Satisfied with some, dissatisfied with others **15%**

Generally dissatisfied **3%**

When given the opportunity to comment on their courses, these four students - all from different schools, said;

1. "I am very proud to be a TVEI student because I know that I am learning to do things which I thought I would never learn to do, like computing, designing models to make them as efficient as possible."
2. "TVEI is my favourite. It isn't boring and people get more involved in what they are doing than they do in other lessons."
3. "I think that TVEI is a brilliant idea because it is bound to help you find a job more easily in the near future because of all the new skills."
4. "TVEI helps education a lot, I think, because it offers good subjects and new subjects in which the modern day works. These subjects nowadays are essential.... because more jobs are needed with these skills. TVEI gives the necessary equipment and we should take advantage of it and use it well."

Context

The statistical information and quotes above were collected from the third group of 187 students in the four schools. At the beginning of their fourth year of secondary schooling they had chosen the TVEI 'option', which covers their courses from 14-19.

The features which distinguish a TVEI course are these;

- work-related qualifications and skills
- preparation for employment
- practical applications of qualifications
- problem-solving
- development of new skills and qualities
- planned contact and work experience with local employers
- progression through a four year curriculum and into employment/training/FE and HE
- assessment and monitoring throughout the course, much of it on a self-assessment basis
- careers and education counselling
- resources on an adequate scale to assist the courses
- accommodation, equipment and teaching materials reflecting changes and advances in technology

The students make their choices after careful career counselling and experiencing some of the activities on 'taster' courses. During their course, Records of Achievement are used as a vehicle for discussing and recording their progress and setting goals and objectives.

Much of the success has been due to the way in which the four schools have shared the development work including staff training and updating, as well as sharing the most expensive equipment.

Analysis

By giving the staff the training, time and equipment to re-examine the curriculum that they offer and the way in which the students learn from it, the schools in the TVEI pilot have successfully altered the emphasis of their learning. They have, according to the pupils, parents, teachers and employers involved, enabled learning to take place in an enquiring, experimental way so that skills and concepts which are relevant to the world of work, higher and further education are acquired in a cooperative environment.



PREPARATION FOR ADULT LIFE AND WORK

Young Enterprise - College Style

Two Young Enterprise groups are running at this College; one is formed from BTec and A level students and a second by Fashion Students. They have advisers from a local bank, a manufacturer and two retailers.

'College Enterprises' organised a company to manufacture cushions and market specialist key fobs. 'No Repeats' manufactured duffle bags and jewellery. Both companies were successful and have declared at the end of the year on liquidation a dividend of between 6p and 10p a share.

The Principal reported that as a shareholder, he was paid a dividend of 30p on his investment of £1.25.

Each group received a gruelling trial by regional judges in the course of which, as well as in the course of running the company, they learned many valuable lessons which just can't be taught in traditional ways. They also completed a written test. The judges were so impressed by the 'No Repeats' that they have been selected to go on to Area Finals in the 'Best Company' section.



Analysis

Young Enterprise is a national scheme which gives young people direct experience of running their own company and meeting challenges on their own.

Because the scheme provides for assistance to be given by professionals in the local community, further links are fostered. Not least there are possibilities of progressing to national championships which would be good for the students and good for the college.



THE NATIONAL CURRICULUM

What It Is and How It Will Affect Cambridgeshire's Children

5-16

All children must study religious education, a Core of mathematics, English and science and a full Foundation list of history, geography, technology, music, art, physical education.

11-16

All children must study a modern foreign language.

14-16

Religious education, Core and Foundation must occupy at least 70% of student time.

Attainment targets and assessment

All children will have programmes of study to which are linked attainment targets and assessments at 7, 11, 14 and 16.

Assessment will be by a mixture of formal tests, classroom observations and tasks.

Aggregated results of tests for schools and for education authorities will be published from 1992. GCSE results are already published school by school and aggregated locally and nationally.

Differences

Primary: greater emphasis on science and technology

Secondary: 'balanced' curriculum 11-16; no options to drop science, foreign language, humanities, arts. Roughly 30% of time for 'cross-curriculum' studies including Information Technology, Health Education, second foreign language, other subjects not in core and foundation lists, Careers Education, study skills, personal and social education programme.

When it starts

Primary: From September 1989

Secondary: Phased from September 1989-1991

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Cambridgeshire

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